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MONTHLY

TODAY'S COMPUTERS

EXCLUSIVE: Unique, New PC Software For Share And Commodity Traders

How Juliette, At 24, Sold $1m Worth Of PCs

Local Networks Can Save You A Fortune

Two New Tax Packs

PCs For Farmers, Family Trees, And Churches

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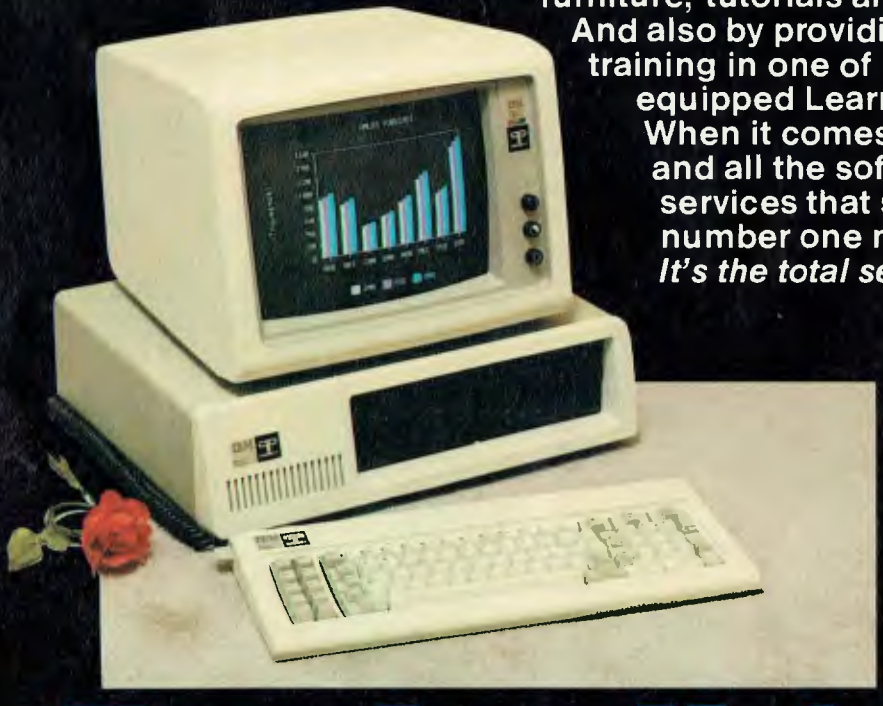

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TODAY'S COMPUTERS

August 1984 Vol 1 No. 4
A joint publication of The Age and The Australian Financial Review

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SPECIAL REPORTS

We're up in size! Today's Computers this issue explodes to 180 pages, a 48-page hike on our July issue and a 64-page jump on our first issue in May this year.

That makes us the fastest-growing hi-tech publication in Australia.

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PC AUSTRALIA

EDUCATION

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Ken McGregor
Managing Editor

When you are officially
national IBM PC Dealer of the Year
you don't have to shout.

Editorial

Ken McGregor

■ Most people, I suspect, have little or no idea of the amount of information now available by electronic callup. Stored on electronic information banks, mostly in the US, Europe and Japan, a growing proportion of the world's research is increasingly available, via your instructions off a computer or terminal keyboard.

Small communicationg devices, called modems or acoustic couplers, are simply attached to your system. Information is translated out of computer mode down a telephone line to you. You don't really need to know more to get with it.

The amount of information available now is formidable. But you haven't seen anything yet. Public videotex in Australia later this year will up the action. Specialised new information banks will develop covering law statutes and cases, tax judgments, the print media, share price histories and current fluctuations, patent information, lists of publications, lists of people, even cures for illnesses and diseases. And so on.

Two developments will occur. It will get easier for non-computer people to use these information banks. And the information banks will become more useful in the quality of data they can offer.

■ Last month we began an Electronic Information column that will regularly cover this important area.

■ This month, as our magazine continues to grow in size we begin 2 more regular features – an Executive Education column and a Books column, both reflecting current interest in these areas.

■ Thank you for the manuscripts and letters. In our first 2 issues we made a strong plea for you to write for us. And how great the responses have been!

We are already using many reports from readers and we aim to use many more. Please call us, or drop us a line, with your ideas – they could turn out to be a cracking 3-page report, or even our cover story.

Address all queries here to me and remember the following criteria: Ask us first before going ahead. Write in non-computer English. Supply clean, double spaced copy and include photos wherever possible. We are mostly interested in applications, case studies and personal experiences.

■ I would also be most interested to receive criticisms and suggestions for covering areas we currently do not touch on. Today's Computers can only be as good as the people who read it think it is. So tell us your feelings about the fastest-growing computer magazine in Australia.

■ Talking of growth, we're bursting out all over. You might have noticed we jumped from 116 pages in our first 2 issues to 132 pages in our third. Well, this is our fourth and you get even greater value for your subscription, or $2.80, with 180 pages.

Our growth, of course, is due in no small measure to our new publisher, Bina Gupta. Formerly our national sales manager, Bina went into the publisher's chair as this issue went to Press.

■ For just $2.80 you can win more than $13,000 worth of one of the best computers around – a Digital Equipment Rainbow plus PC, plus software. That outlay of $2.80 is what it costs you to buy Today's Computers.

You don't have a thing to lose! Simply fill out and return our Digital coupon on page 159 as soon as possible.

■ Whatever happened to the Real Estate Institute of Australia's grandiose REINET electronic information system for agents? It started up last year and a big outside heavy was hired, Sue Larkin. REINET's progress, or lack of it, is intriguing in the light of a recent low-key go-ahead for the Real Estate Institute of NSW's multi-list EAC operation. The REI of NSW plumped a key contract with a small Sydney company.

■ Computer Power's high-profile CLIRS legal retrieval database operation, with a 3-5 year monopoly in Australia, is aiming not merely at legal eagles as users, but accountants and the general corporate field. Wonder what other info will be stacked up alongside those weighty statutes.

■ Now enjoy reading the latest issue of Australia's best and easiest to read magazine about computers. And thank you for your support.

Ken McGregor

BACK COPIES

Back copies may be ordered through your local newsagent or obtained by calling personally at the Sydney Morning Herald Building, 26 Hunter Street, Sydney.

Coming Up in Our Next Issues:

■ An in-depth test of investment packages on personal computers.

● The Australian New Zealand Brisbane Conference – why libraries are at the crossroads in electronic information.

● The battle of the big integrated packages, Framework versus Symphony – first benchmarks.

● Education – the IBM push and strategy by competitors.

● Electronic buildings – make sure your new office can handle a local area network installation. If not, it could cost millions to re-construct.

● Computers on yachts – why ocean racing will never be the same again.

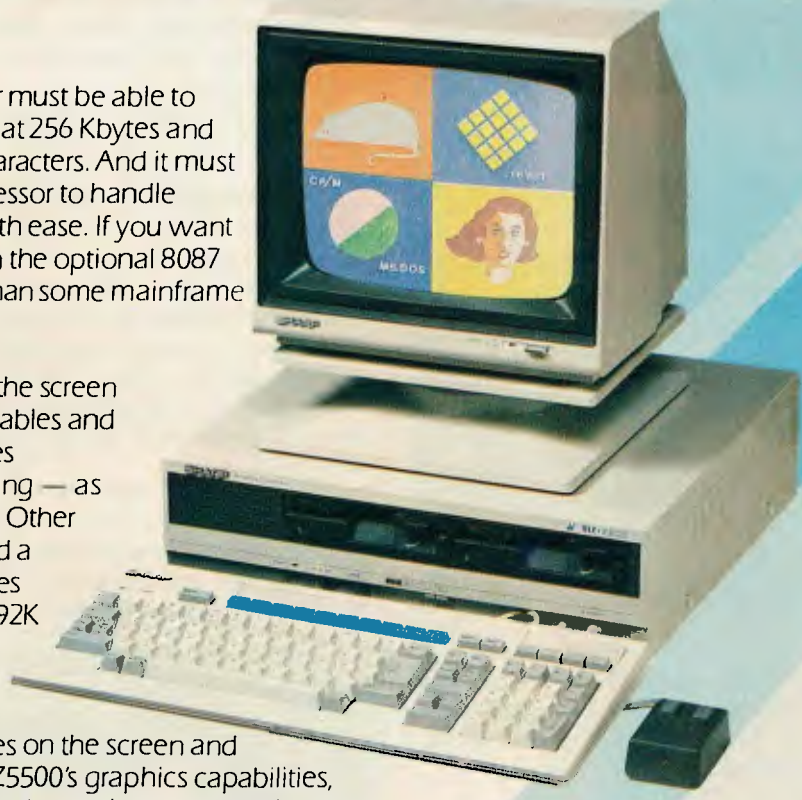
● Graphics – which are the best packages to use?

● Country-by-country economy call-up by computer – billions of dollars are at stake.

● Selling PCs to solicitors. What are the traps for users?

The new Sharp MZ5500

A rare combination of features.



1. 16-bit Processor.
For real performance a personal computer must be able to handle lots of memory; the MZ5500 starts at 256 Kbytes and can be expanded to over half a million characters. And it must be fast; the MZ5500 has a true 16-bit processor to handle complex graphics and data processing with ease. If you want real number-crunching power, just plug in the optional 8087 numeric data processor for more power than some mainframe computers.

2. Multiwindow.
Up to four windows can be displayed on the screen simultaneously, allowing you to mix text, tables and graphics. The bit-mapped display simplifies programming and provides smooth scrolling — as little as one dot at a time with no 'jittering'. Other enhancements include colour palettes and a colour-priority function. The MZ5500 comes with 96K bytes and can be expanded to 192K bytes of video memory, ensuring a high resolution screen image.

3. Mouse.
An optional mouse lets you point to shapes on the screen and issue commands. Complementing the MZ5500's graphics capabilities, the mouse is ideal for drawing shapes or for bypassing commands.

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The MZ5500 uses CP/M-86* and MS-DOS 2.0** (an option currently under development) operating systems. Used by leading software authors, so you can run the most popular software. Choose from word processing, accounting, database management and others.

5. Sharp engineering.
The MZ5500 sets a new standard in quality of engineering, reinforcing Sharp's reputation as a world leader in computer development.

Complete the coupon or call Sharp today, for your nearest dealer.

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Please send me some literature on the MZ5500 ☐
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APRIL

High Flyers And Top Sellers

A vivacious, Scottish-born bachelor girl, **Juliette Nobes,** has taken Australia's $300 million a year personal computer game by storm.

Juliette, at 24, is the most successful salesperson with one of IBM's major dealers, ACI Computer Services. She's also the youngest, or "baby" of the ACICS sales staff, and rarely starts on the road before 9.30 am.

Her brief – hit the big corporate and multinational potential clients and sell. In the past 12 months, operating from ACICS's Sydney offices, Juliette has done just that, yanking 30 new valuable accounts aboard, and writing more than $1 million in sales.

As the dreaded IBM-PCs spread in corporate offices, Juliette began earning as much as the normal male general manager. Her income now includes a commission on top of a salary which itself is double the salary she started with.

Before ACICS, Juliette – born in Helensburgh, near Loch Lomond – read that the IBM-PC had taken off in the US. She figured IBM would do just as well in Australia and abandoned previous careers selling real estate and dictation machines.

Personnel agency

Juliette talked to a personnel agency, which smartly found her a job with the Tony Klingender ACICS operation.

What does she do when she is not talking up the merits of PCs with multinational corporation managers? Well, Juliette lives less than a quarter of a mile from a golf course and she does enjoy the odd overseas jaunt.

We're not surprised that corporate heavies can't resist that blonde hair and Nobes grin. Back to your spreadsheets, fellas.

Lynn McDonough, of software packages wholesaler-importer, Microbyte, takes time off for a little skiing at her secret hideaway in Europe.

Colin Spinks, marketing guru at General Electric Information Services, calls up his company's large computer bases in the US for a growing range of Australian clients.

Dieter Monch, head of Nixdorf Australia, is looking at several key vertical markets, including supermarkets and manufacturing, to help double his sales every 24 months.

tool for modern times

photo – Bill Forsyth

Felicity St John, marketing whizz at City Personal Computers, sells successfully $500,000 worth of IBM and Apple PCs a year to Sydney users, such as Kentucky Fried Chicken, J.I. Case, Abbott Diagnostics, the Uniting Church and radio stations, 2SM, 2UW. A stunning 30-year-old redhead bachelor girl, Felicity has helped make City Personal Computers a leading computer retailer.

WHAT PRICE DO YOU PLACE ON SUCCESS? $2922? $3540? $4750?

No matter how you look at it, the EPSON QX-10 is a lot of computer for your money.

But one look at the following computer packages will convince you that at today's recommended retail prices, you'll be getting a lot more for your money.

For $2922* recommended retail: ☐ 192K RAM. ☐ Dual 320K disk drives. ☐ 12" 640 x 400 pixel monitor. ☐ High resolution graphics.

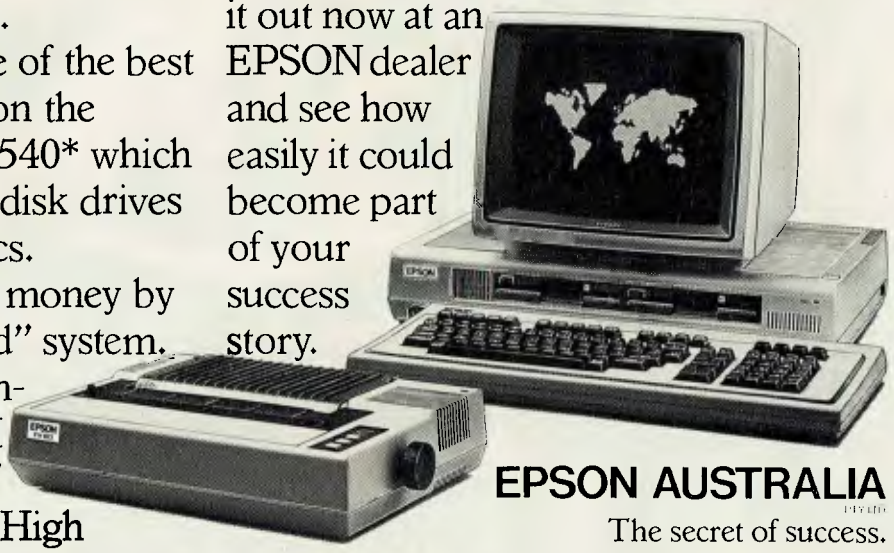
Or if you prefer one of the best colour monitors available on the market, then it will cost $3540* which includes 192K RAM, dual disk drives and high resolution graphics.

Or save even more money by buying the Epson "bundled" system.

For $4750* recommended retail: ☐ 192K RAM ☐ Dual 320K drives. ☐ 12" 640 x 400 pixel monitor. ☐ High resolution graphics. ☐ FX-80 printer. ☐ Printer Cable. ☐ Plus 4 major software packages (Wordstar[1], Mailmerge[1], Spellstar[1], and dBase II[2]).

And as you would expect, hard disk is also available.

The above prices mean considerable savings on what you would normally expect to pay (particularly in the software) with a computer as powerful as the EPSON QX-10. Check it out now at an EPSON dealer and see how easily it could become part of your success story.



EPSON AUSTRALIA

The secret of success.

Epson Australia, Unit 3, 17 Rodborough Road, Frenchs Forest, NSW 452 5222.
Suite 2, 173 Wickham Terrace, Brisbane, QLD 221 4033. Level 3, 543 Blackburn Road, Waverley Square, Mount Waverley, VIC 543 6455 (from July 10).
*Recommended retail price not inclusive of sales tax. [1]Wordstar, Mailmerge and Spellstar are trademarks of Micro Pro. [2]dBase II is a trademark of Ashton Tate.

Growth in the number of computers and related equipment and changes in their applications created a need for direct communication between them. Hence the development of LANs – local area networks – for corporate users.

There are several key benefits corporate users can derive from LANs, according to one of the majors in the US market, Sytek.

Ken Biba, head of Sytek's new personal computer products division, recently visited Australia to confer with local representative Network Solutions Australia, of St Leonards, Sydney.

Richard Freemantle

"Many users are confused because they have a wide variety of different computers," said Biba. "They have heard much of LANs but the major suppliers, such as IBM and Hewlett-Packard, simply haven't come out with their LANs."

Biba claims the following benefits result from committing to a LAN program:

- Full interconnectability among a user's machines.
- Substantial flexibility towards a growth path.
- A LAN is an easy way to grow with compatability, but not indispensible to a user's overall operations.
- A LAN can offer extra facilities, such as security.
- It is not difficult to cost-justify LANs.

With a dozen major installations to date in Australia, Network Solution's marketing manager, **Richard Freemantle,** noted that Sytek LANs operated with cable, microwave or fibre-optics connections. BHP and Telecom are clients.

Biba said the most important LAN application was personal computers communicating with computer mainframes. Next most important was peripherals sharing (hard disks and printers). PCs talking to other PCs only rated number 3.

Ken Biba

He claimed that Sytek controlled 30% of the US market for communications between personal computers and computer mainframes. Other vendors, 3-COM and Corvus-Omninet, led the PC to PC field.

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The first Computer Of The Year that won't be out of date by next year.

The highly respected "Your Computer" magazine has just named the Apple Lisa® as Computer Of The Year, 1984.

In their own words, "People will remember 1983 as the year that Lisa revolutionised personal computing."

Surely good news for the business on the verge of choosing the ideal system.

In the frantic, fast-moving world of micro

technology, where new models are here today and gone this afternoon, Lisa seems to be a reassuring exception.

This is the most advanced personal computer in the world, with up to one million bytes of internal memory.

Unlike conventional computers, Lisa works visually, the way you do. Those complex computer commands are replaced with familiar symbols and a palm-sized mouse.

Countless man-hours are saved because Lisa starts being productive from the moment it's switched on. (Even for staff who've never used a computer before.)

Little technical miracles like these don't exactly happen overnight.

Considering they've taken us a good five years to perfect, even if our competitors simply copy, they should be kept busy for some time.

There are three Lisa models of varying price and capacity, any one of which your Apple dealer would be proud to demonstrate.

You probably won't be the only company moving to Lisa technology this year.

We expect quite a few of our competitors will be doing likewise.

Lisa. The personal computer for the office.

Letters

Playing it safe

Sir: Unfortuntely I missed the first issue of Today's Computers, but wish to congratulate you on the excellent quality of your June issue. Your articles and stories are easily understood and extremely interesting.

Having placed an order with Dick Smith for a Challenger, I found your article on his Cat of great personal interest and wish to know if perhaps I missed a similar article on his Challenger in your first issue. If not, it would be gratifying to see such an article in a future issue.

Trevor Housley's article on salespersons decribed a situation I could readily identify with, especially since I am a novice. Although I vaguely knew what I wanted I could never find a salesperson to tell me about computers in plain English, or to supply me with comprehensive literature. This is where your magazine will be invaluable to small business people like me, who know why they want a computer and what they want it to do, but have difficulty deciding on the right one. I eventually decided on the Challenger because of its price and because the expander will give me more than I need for my words, so in fact I have played it safe.

Areas of concern to me, and many others, I daresay, are IBM (and therefore Challenger) compatible software availability, usage of light pen and mouse and the transferability of 2-dimensional material; eg photos or illustrations, to on-screen and dot matrix printed form via a video camera.

Ria Linnehar
Ayr
NQ 4807

Taping displays

Sir: Recently I purchased a Commodore 64 Personal Computer and found, on reading the user manual, that to use a television as monitor, one end of the video cable was required to be connected to the aerial socket, and that the channel to be used would have to be a UHF channel. Unfortunately my set is an early PYE model and the UHF channel had not been adapted for use. To receive UHF I use Channel 10 on my video (Toshiba) recorder.

As this worked for TV reception, I thought it was reasonable to assume that it should also work for my PC. I was very pleased to see that what I had assumed was in fact correct, and I am now using my TV as a monitor.

Now, to get to the point of my letter. As I am using a channel (CH 11) of my video, I again assumed that I would be able to tape any PC display which appeared on my TV monitor. This, I am pleased to say again, was correct.

The question I would like to put to you is – has this been thought of before? If it has, I have not been able to find any reference to this fact.

As I am a beginner in the use of a PC I cannot, at this time, go into any detailed suggestions as to the potential usage of taping computer displays on video, but among some thoughts that come to mind are:–

Save on paper (if a printer is not owned then results could be saved on video tape – the tape to be used over and over).

Making titles for home video recordings.

Businessmen may tape graphics and results of computer research on video for conferences, etc.

Again I ask, has this been thought of before, if not, why not?

Geoffrey Howard Sivyer
Lyneham
ACT 2602

Computers for disabled

SIR: I read with interest (cover to cover!) the first edition of your magazine.

I appreciated the position you have taken in regard to the areas covered, viz: Practical applications, education, communication, government policies, and software reviews.

In response to your invitation about what readers would like to see covered in future editions – I offer some comments on behalf of the Muscular Dystrophy Association of Victoria.

Computers have tremendous potential to offer persons with disabilities. Handicaps caused by such disabilities can be effectively reduced and sometimes eliminated through the introduction of hi-tech hardware and software.

Unfortunately, government departments responsible for servicing the needs of disabled people have been very slow to recognise the scope and application of computers in rehabilitation *and* habilitation. I know there are some good examples of computers being used to increase employment opportunities for disabled people (eg, the program being run by Sydney Smith, computer scheme manager for the National Association for Training the Disabled in Office Work).

However, there is still much to be done to improve awareness, acceptance and availability of computers (either "off the shelf" or in an adapted form) for other areas of daily living activities.

I myself am very interested in voice-controlled systems and have personally reviewed and trialled 4 such systems and could give elaborate comments on these.

I am affected by muscular dystrophy, have limited use of my arms and cannot access a conventional keyboard. Therefore voice is possibly my only entry into computers.

Roger K. Melnyk
executive officer
Muscular Dystrophy Association
of Victoria
South Melbourne, Vic

Osborne amazes

Sir: After reading your guest editorial by Adam Osborne in the June issue of Today's Computers, I felt that I really must respond to some of the strange comments made by Mr Osborne.

In the first place, Mr Osborne maintains that a $500 software package costs $7 to produce. This is so profoundly untrue that it leads one to question Mr Osborne's seriousness throughout the editorial.

Take for example *Lotus 1-2-3*, a package that sells at the rate of 10,000 units a month, a figure that leaves Osborne unimpressed. (It impresses me!) He maintains that such a package is overpriced, based on the cost of the raw materials. He does not, however, mention the $10 million that went into developing the package in the first place.

If this is an example of Mr Osborne's costing technique then it is obvious why his computer company did not last long. I would also take issue with the comment that documentation is "a thin, badly written, badly reproduced sheaf of documents and a floppy disk".

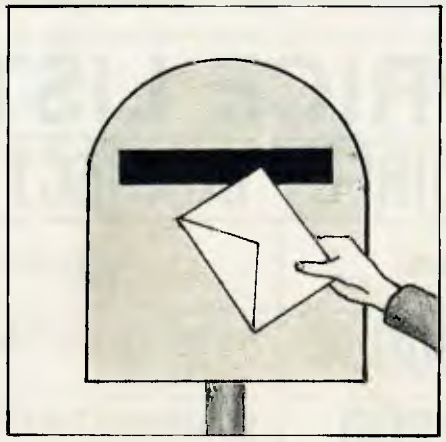
Is Mr Osborne referring to all software in this sweeping statement? If so, I would suggest he has a look at the current crop of packages.

The unimpressive(?) Lotus package's thin sheaf of documents amounts to 362 pages, a template, a quick reference guide, and tutorial diskettes, and is printed in the highest quality. The same is true for *MultiMate*, *Wordstar*, etc.

Mr Osborne goes on to say that service and support are used to justify the high price of software, but that this support is not forthcoming because of the low profit margins on software to the dealers. This is another generalization that is so sweeping as to be meaningless.

I would agree that some retailers do not give support – in fact, most do not. This has nothing to do with profit margins, however, it is because most retailers do not have the ability to provide support. Our own experience in providing this support has shown that users are happy to pay for it.

Osborne's contention that support does not justify high prices is ridiculous and is a pointer to the cut-price, discount mentality that characterized the Osborne computer before the company collapsed. Any serious business user is happy to pay a fair price for a good service. The problems occur when discount houses sell boxes of hardware and software without the ability to provide the support that is so essential.



All in all, I must say that I was amazed to read Osborne's comments. One would expect that someone with his experience in the computer industry would be somewhat more informed in his criticisms.

It sounds very much like Mr Osborne is suffering from a severe attack of sour grapes, and that his unfortunate experience in the low end of the market has left him bitter to the point of being unable to provide objective comment.

Peter Horsley
managing director
Think Computers
Mitcham, Vic 3132

Editor: Osborne Computer Company is still operating vigorously, but without Adam Osborne in control.

Why the Compaq?

Sir: Let me congratulate you on a magazine which fills a very definite need in the computer buyer's quest for information.

That said, I would like to register my disappointment with your review of PC-compatibles (June issue) for the following reasons:

(1) Review styles differ in emphasis from one machine to the other.

(2) Hard disks, desktops and portables are not separated.

(3) No useful price comparison was done giving comparable configurations.

(4) No feature comparison table was included.

(5) Why review the unavailable Compaq, when to be fair the Televideo is more locally relevant?

On particulars relating to the Corona (and as a Corona dealership we cannot comment on the other data), the correct single unit retail prices as at May 21, 1984, are:

9" portable, 2 floppy drives:
$4925 including sales tax

12" desktop, 2 floppy drives:
$5175 including sales tax

12" 10 Mb hard disk, 1 floppy drive:
$8075 including sales tax

All *well-written* graphics programs run on the Corona without any need for modification. If they use IBM's *Basica*, GW-BASIC is substituted. *Lotus 1-2-3* and others which address the IBM hardware directly will work using an intermediate program which converts the screen matrix from 640x200 to 640x325, and sends the graphics to the correct screen location for the Corona standard screen, without the use of an additional graphics card. We would happily demonstrate it.

The Corona also includes a screen dump facility to send text or graphics to the popular Epson printer. Finally, IBM PC/DOS 2.0 will run directly if you can't wait for the Corona MS/DOS 2.0, which is due for release – we have had field-test versions since February.

Combine these benefits with the Corona's availability and service backup and you have a very desirable machine.

Robert Judd
computer systems consultant
Explicit Computer Services
Richmond, Vic, 3121

Editor: We believe different review styles add to our analysis flavour. It is not easy to correlate a big number of computers for review at the same time – we have only recently got our hands on a Televideo. We agree on Mr Judd's points on separations of different types of machines, comparable configurations, tables, etc. We reviewed Compaq because of its success in the US market and the fact that supplies are indeed trickling into Australia, although no-one knows why Compaq declines to appoint a distributor here. Retail prices on Corona were supplied by AWA Data Systems.

SENDATA

PRICE LIST

DIRECT CONNECT MODEMS

MODEL	DESCRIPTION	RECOMMENDED RESALE EX TAX
300	A/O 300 BPS FULL DUPLEX 590000	$220
1200	600/1200 HALF DUPLEX ASYNCHRONOUS 590105 75BPS TRANSMIT 1200BPS RECEIVE 590107 1200BPS TRANSMIT 75BPS RECEIVE 590109	$265.80
1200 Synch	1200BPS HALF DUPLEX SYNCHRONOUS 590105BS	$350
2000	AUTO ANSWER/DISCONNECT, USER SELECTABLE TRANSMISSION SPEEDS OF 75, 300, 600 or 1200BPS 592000	$560

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Kaypro Menu: Value For $$

Kaypro computers were unleashed on the unsuspecting Australian market two years ago. Today, via distributor President Computers, there are five thousand units installed in all industry sectors. But what application software packages are available? Rick West provides an independent view:

When the Kaypro II was released software packages provided with it included: Select, a word processing system; Profitplan, a spreadsheet program; and SBasic, a structured basic language.

Profitplan is a spreadsheet program similar in many aspects to VisiCalc. The small businessman can use it for budget planning, financial forecasting and simple accounting applications.

In December 1982 Kaypro substituted the Perfect software packages for the Select package. Included were: Perfect Writer, an advanced word processor; Perfect Speller, a spelling checker and dictionary; Perfect Filer, a database system; and Perfect Calc, an electronic spreadsheet.

I have used Perfect Writer extensively for letters, business reports, etc, and for writing and editing basic programs. I have found it to be excellent.

Both my wife and I have used Perfect Filer for mailing lists, utilising a customised layout. I have also used it for various technical and general-purpose databases. Other applications could include specialist forms and documents, lists, references, staff records, customer and client records and lists. The only serious failing of Perfect Filer is its inability to handle simple mathematics.

I have used Perfect Calc for both technical and financial work. The technical work included linear-programming-type applications and project feasibility work. The financial applications ranged from simple budgeting through accounting applications to project costing, evaluation, present value assessment and risk analysis. In this last application the most difficult part is to set up the original model and test its validity.

Rick West

Perfect Calc can be used for many other business applications, including analysis of stocks and shares, real estate, business budgetary control and statistical work.

If you do have the Perfect software package I recommend that you explore its potential uses in your business. Although it is not an easy package to learn, once mastered it is easy to use.

President Computers recently announced that the latest software to be supplied with Kaypro computers will include MicroPro International Corporation's Star series programs, instead of the Perfect software package.

All this Micropro software is quite well integrated and, as much of the command structure is common, mastering it all is not a particularly difficult task.

WordStar 3.3 is the latest version of what must be one of the most popular word processing programs. It features a wide range of printing and formatting options and has excellent prompt and help menus. These restrict the displayed screen working area, but you can turn off the help displays. These prompt and help menus are ideal for the new user as well as the less-experienced user.

Mailmerge works with WordStar as a multi-purpose file merging program. It can be used to produce customised form letters, labels for mass mailings, assemble documents from boilerplate paragraphs and print invoices, etc, from DataStar. Mailmerge does not have the list-making capability of Perfect Filer, but it is more powerful in generating form letters.

Together WordStar 3.3 and Mailmerge are a very useful tool for the businessman who handles semi-repetitive correspondence such as calling for quotations, and legal documents.

CalcStar is an efficient electronic spreadsheet which has many business uses including budgeting and financial planning, accounting, production planning and all the various spreadsheet applications. It offers a wide range of func-

tions, including financial and regressional analysis permitting you to explore various "what if" and "risk" situations. It has the ability to pass data from a database directly to a spreadsheet without it having to be keyed in again.

DataStar is an effective data management system. Any kind of information commonly used in business can be entered, revised, accessed, retrieved and sorted. It is readily accessed with WordStar and CalcStar. Its flexibility allows you to create many tailor-made records from a database. For example, a news-agency proprietor could extract from his customer records a paper delivery listing sorted in streets, a customer telephone and address list, and readily update them as required.

Infostar, provided with the Kaypro 4 & 10, is a database management system based on a combination of DataStar and ReportStar. It provides report writing and form generation features, allowing arithmetic calculations and incorporation of data from multiple files. It permits easy updating of records across file boundaries ensuring completeness and accuracy of records and data sorting.

ITS FLEXIBILITY allows you to create many tailor-made records from a data base.

Lesson disk

dBase II, from Ashton Tate, is also supplied with the Kaypro 4 & 10. This powerful database management program can use the files created by the Star series programs of Micropro. Supplied with it is a lessons disk, to make life easier for the beginner.

MBasic from Microsoft remains one of the most popular of the basic languages in use. It is a user-friendly interpreter language which is not particularly fast.

SBasic is a structured programming language. It is a full compiler basic which is similar to Pascal in program structure.

CBasic from Digital Research is a compiler basic which outputs into an intermediate file.

The small businessman, doctor, lawyer, accountant or engineer can readily set himself up with a Kaypro 10, 15-inch dot matrix printer and a daisy-wheel printer for less than $7,000 giving him 10 megabytes of hard disk capacity and all his software.

I believe that the Kaypro range of computers offers the small businessman and the professional one of the best deals available in Australia!

Rick West works with a major Australian multinational and his wife operates a small business out of the West's Sydney hideaway.

The Computer Frustration Cure

Computers, the most predictable of machines, stir intense emotions when they don't work as expected. Their malfunctioning can upset us as much as the illness of a friend.

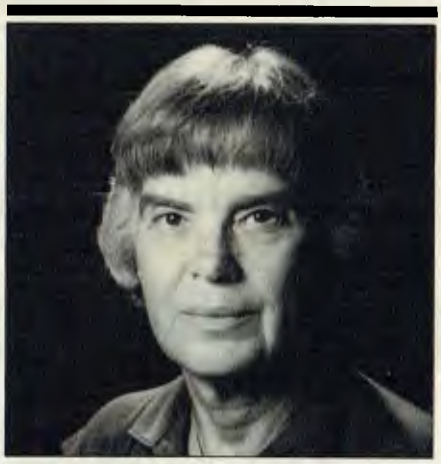
The other evening after work I ran to the bank, shoved my card into the slot, tapped in my code, grabbed a fast $40, and held out my hand for the card. It didn't come out. I felt like taking a poke at the machine. "Give me back my card," I told it loudly.

I am not a computer novice. I have my own PC; I understand its naughty habits, its kinks, and its petulant error messages. I use a mainframe at the college where I teach. So why did the bank machine make my blood boil? How can a machine that is the epitome of logic be capable of producing so much emotion?

Episodes like this evoke a flashback to one's early attacks of computer anxiety. I remember my fears that I'd break something, that I'd press the wrong button and a wisp of smoke would curl up out of one corner, that I'd lose 6 months of someone else's work, that I'd cause a "crash," crush a disk, or tie a tape in knots. I was not reassured by the old saw that the part of a computer most likely to cause trouble is the nut in front of the keyboard.

The computer that I learned on, a PDP-8, used a printout instead of a video display. Every so often my mistakes threw the thing into an endless loop; it would chatter on and on, regurgitating yards of paper and refusing to return control to me. The sound would bring in a member of the math department on the double. He would glare at me, hit Ctrl-C, and stamp out.

The combination of anxiety and frustration is demoralizing. Recently I upgraded the memory on my PC by installing an expansion card. This procedure requires removing the microprocessor cover, identifying the various innards, and resetting several minuscule switches. When I rebooted after the installation, instead of receiving the cheerful "Hello," the >A prompt, all my PC gave me was the low-level error message "10AA 201." The machine would not take instructions from me. I had a bad 30 minutes during which I retraced my steps. When I finally got it to respond with the familiar >A, I felt as though I was seeing a friend who had just recovered from an illness.



Barbara Schoen

And it *was* like seeing a friend. Computers are usually so responsive and alive, and this, I have to admit, makes putting up with an out-of-sorts one all the more frustrating. I understand its beeps and clicks the way I understand my cat's trills and purrs. I am learning to use its secret language, hex. One of my favorite Sunday occupations is to explore a new piece of software with it.

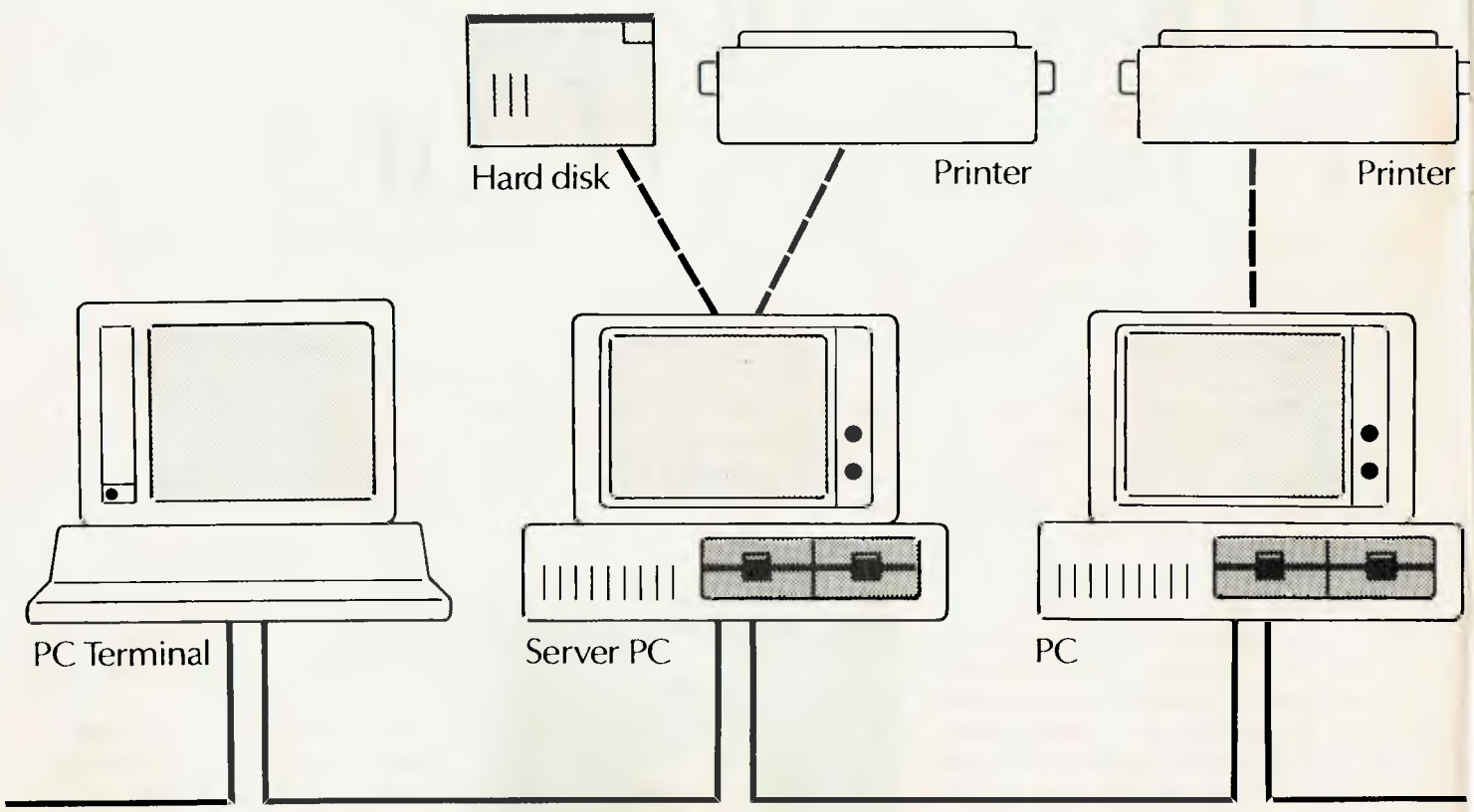
But it is not alive. Indeed, it has some rather attractive artificial characteristics. It is always ready and patiently repeats the same dull task. And it won't tell anyone about my stupid mistakes (like putting 3 hours' work on a RAMdisk and then losing it by turning off the machine).

The computer is also unnaturally stubborn. If I don't work its way, it doesn't cooperate. It practices behavior mod on me. "Redo from start," it tells me. I have to alter my behavior because the computer can't alter its own.

The best thing the computer has taught me is to trust that, if I go back and retrace my steps carefully and follow instructions precisely, I will arrive at the desired result. This is the cure for computer anxiety. ■

Barbara Schoen is an associate professor at the State University of New York's College at Purchase, where she teaches writing. She also writes novels, short stories, articles, and poems.

Telecomputing



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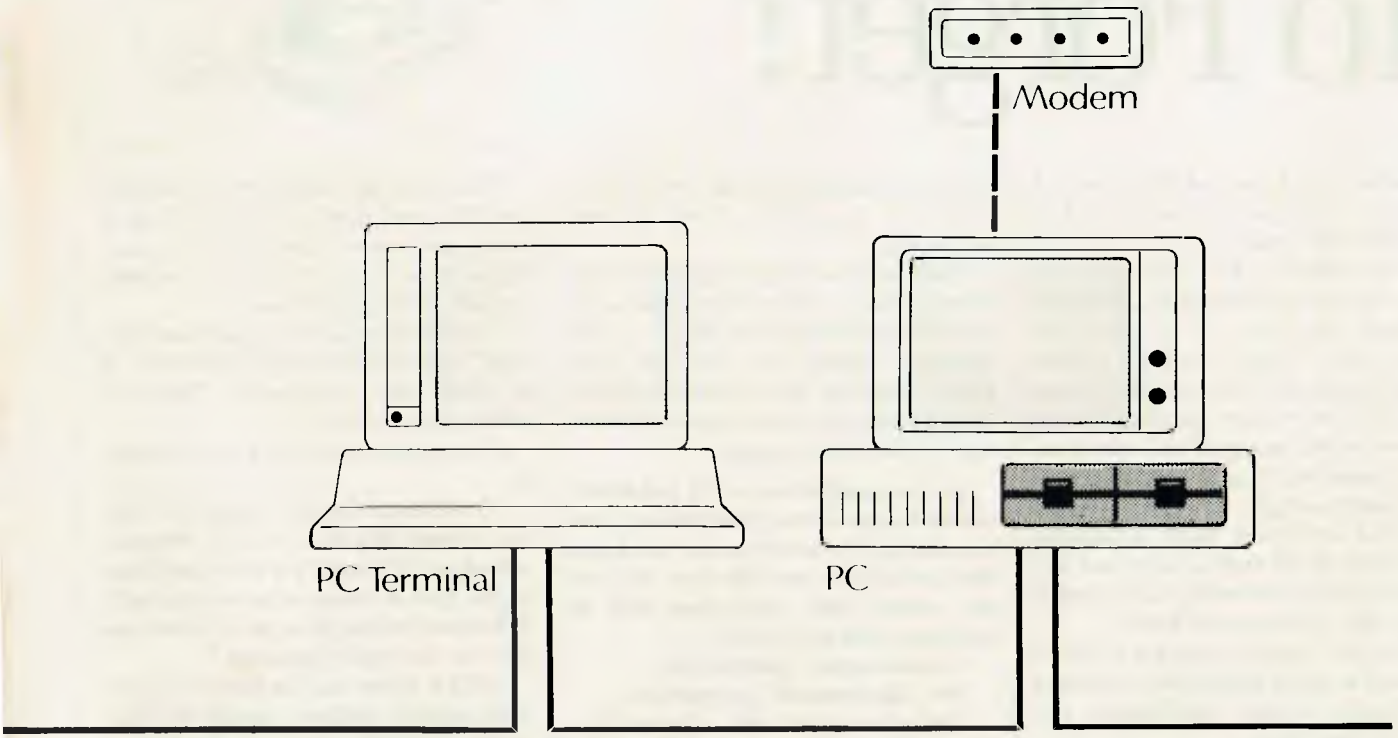

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Down on the chicken farm Joe was cogitating about computers and intelligence and wondering why the human brain is unreliable.

Drinking To Forget?

The other day I broached the subject of computers with Joe, who runs a chicken farm down the road.

He was sitting in his "office", a cubic e attached to the sheds, with paper clips clutching the reams of invoices like overfed crocs lying in wait for further prey along the wall; the inevitable girlie calendar next to them extolling the super service you can get if only you were smart enough to bring your ailing auto to Ken Smart's garage.

Joe had a minute's break in between his rounds on the farm, and he was in a mood for a bit of bantering. "Can computers think?" he wanted to know.

"Well, Joe" I said, "there are at least 3 different kinds of intelligence – human intelligence, animal intelligence, and machine intelligence."

"Four," corrected Joe, "How about military intelligence?" He laughed contentedly. Joe likes to show at times that he knows a thing or two about hi-tech.

"The machine intelligence," I continued, undaunted, "is called artificial intelligence and is present when a machine can do a thing that would require intelligence when done by a man."

Joe thought deeply for a moment, stroking the matted fur of his dog Rivulet, usually abbreviated to Rivet, a canine of such mixed ancestry that it could almost be called a pedigree among mongrels.

"In the morn," he opined finally, "I ask Rivet to bring me the paper. He does. Now it is easier for me to ask Rivet to do that – although sometimes he chews off the headlines – than to ask Nick, my youngest. You mean to say your computers will one day be as smart as Rivet and bring me the paper, headlines and all?"

At this suggestion, Rivet growled menacingly.

"Joe," I said, without the slightest sign of exasperation, "here we are talking about animal intelligence. People in the computer game have not yet even started thinking about imitating that. It is tricky enough to think how we can imitate HUMAN intelligence.

"As you well know, a $10 hand-held calculator can already beat you any time at numbers. So now there are machines that can add up your invoices, do your tax returns, and soon there will be machines that will think."

"Like humans?" queried Joe.

"Yes, like humans," I confirmed.

"The other night I saw a guy on TV – the Science and Technology bloke who used to win all the quiz shows – talk about computers. He reads about 20 books a week, he reckons, he remembers them all. One thing he did not know though was why people like to go to pubs. Will your thinking machines be as smart as him?"

From the innocent smile that lit Joe's broad face I knew he was laying a trap for me.

"Look Joe," I said, "you know that the body of your Toyota truck was welded by robots that maybe don't think but are smart enough to tell one gauge of metal from another. Well, there are already robots that are equipped with computers that can listen to your commands. It is called 'speech recognition'."

A stray chook could be seen in the yard, pecking at dirt with the dexterity of a touch typist.

"Chook in the yard, Rivet!" hollered Joe. The mutt shot out of the office at once, and was soon propelling the hapless bird in front of him amidst a small tornado of flying feathers.

"And there are already machines that talk," I continued through the racket. "It is called 'speech generation'. They can even imitate accents."

If Joe was impressed, he did not show it.

"One thing a computer can do for you, Joe, is to get this mess with the invoices sorted out," I pointed my accusing finger at the row of paper clips on the wall. That was a telling blow, and I could see that Joe was visibly affected.

"Will it know that the invoice for my son's school uniform should be filed under 'overalls' for tax return purposes?" he queried with his habitual innocent expression.

"Yes!" I finally exploded. "If you tell it to, Joe, if you tell it to!"

"And can it forget what I tell it, the way my accountant does?"

Seeing that he'd got me into a corner, Joe softened.

"Look, let's go down to the corner pub, mate, and wash this 'artificial intelligence' bit down with a couple of middies. I don't think I am ready for it yet, but maybe we can talk about buying a computer for my kid. Bright lad, tho' he never brings me the paper when I ask him. Not like Rivet."

I nodded in agreement. I knew why people went to pubs.

Peter Loginsky is based in the darkest Queensland bush, with, of course, a nifty lap PC never far away.

Newsfront

Allowing for the integration of special cabling protocol to meet IBM's just-announced local area network (LAN) standards could prove a nightmare for Australian office building owners and users.

Buildings that install IBM LANs will need special wiring. Some may not have sufficient clearance to allow for the IBM cabling. Major revamps of these buildings, costing several million dollars, may be required.

Yet office buildings without LANs may soon be regarded as very second-rate accommodation as the computer revolution spreads. Second-rate accommodation, of course, has a second-rate occupancy rate and second-rate rentals.

Sources told Today's Computers that in most cases building developers will have to pick up the extra tabs for the necessary revamps, and then charge higher rents to recoup. That's bad news for users.

There are few "intelligent buildings" in Australia able to cope. In Sydney, for example, landmark Australia Square is to undergo a major revamp to allow for new electronic systems.

Is your building able to cope with IBM, or other LANs? We suggest you quiz your building developer, IBM Australia, Telecom Australia and your LAN supplier immediately.

□ □ □

PC compatibles, competitors to IBM, have fallen into line with IBM-PC price cuts, as detailed in our PC Australia section in this issue.

For users, at least in the short term, this is good news. Competitors are frantically striving to retain their major selling points, a price-performance over IBM.

Without any announcements yet in Australia, in the US Columbia, Leading Edge, Corona, Televideo and Eagle all confirmed that they were cutting prices by up to 25%. Interestingly, Compaq and Chameleon held back.

□ □ □

The local Australian offshoot of General Electric of the UK has won the tender to supply Australia's public videotex system, Viatel, with its mainframes and Prestel protocol, beating Computer Power. Viatel is now starting up in November, according to Telecom Australia.

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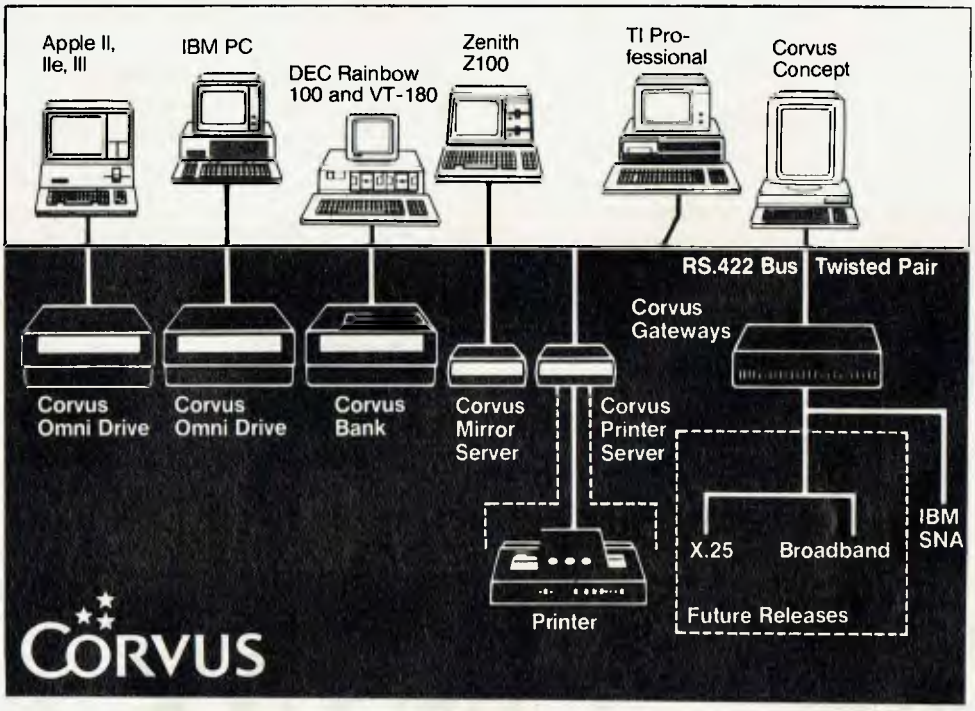
The Corvus OMNINET local area network is recognised as the industry standard. OMNINET has been installed in thousands of offices, small businesses and educational institutions around the World.

OMNINET converts your personal computers into a complete communications system. Each computer in the network has an interface card that looks after network management. Information which is stored on a Corvus Winchester disk is transferred to one computer memory, or sent to another computer, or printer, in the network.

OMNINET allows you to connect up to 64 computers, of different brands, with the ability to share data and peripherals and communicate with each other, interactively.

This means that your business enjoys all the increased power of a mainframe system, while you enjoy not having to pay mainframe costs.

The range of computers compatible to the Corvus OMNINET network exceeds over 20 brands, some of which are shown above. In addition licensing agreements have been finalised with other manufacturers who include NCR, Fujitsu, Dictaphone, Olivetti and Victor technologies.



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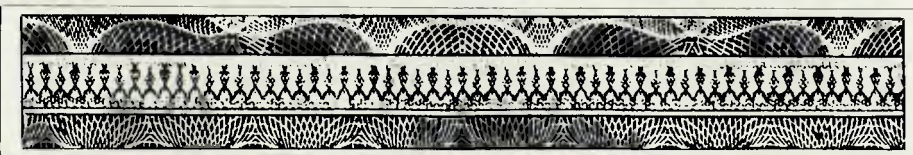

Stock exchange gallery chartists – those long-familiar figures, with their binoculars, sharp pencils, and sheaf of graph paper, may soon vanish like the mist. In their place: the new computerized trader, sans pencil and chart paper, but plus a personal computer.

Small computer systems and a new wave of investment software have brought big-broker analysis power to small investors; but they have also meant that these investors can trade from anywhere in the world.

"Some people are incredibly successful," claims David Kynoch of Research Technology. He cites one individual who spent 6 months planning his computerized investment venture and who now tracks the markets with 3 computers, one on his yacht at Pittwater, north of Sydney.

Kynoch claims that since he began selling his software, you can find commodity traders in the strangest places as well as in the offices of the big-city brokers.

You can now bring big broker power to your small computer. Combine new investment software with new low-cost daily-on-line data – stocks and shares, commodities, and futures – and you get the analytical power of a large corporation's research department.

But if you want big-broker analysis power at home, try getting your financial data straight down the telephone into charting software. You can now do this on your desk-top computer.

You'll need to have data at a price you can afford, and software to suit your trading style and volume. In Australia you can get this from two companies, I. P. Sharp, and Research Technology.

You can get charting software either through I. P. Sharp's bureau service (Today's Computers, July) on-line to your personal computer, or you can buy one of the 50-plus investment analysis packages available from Research Technology.

AAP-Reuters, UPI, Jecnet, Telerate AP-Dow Jones offer local and overseas data on dedicated terminals. But their costs are high, and can go over $3,000 a month. They offer real-time price-tracking – you see the prices as they change during the day. Their services do not include charting.

The affordable new financial data service for personal computer users is Microdata. In this service, Research Technology offers market data at an affordable $45 to $75 a month. This covers commodity price movements and futures, and you can get it if you have an Apple II, a modem, and the Microdata subscriber code.

Research Technology's Microdata gives 2 standard commodity data selections, the "A", and the "B" portfolio, for $75 and $45 each. The difference between the 2 is that the "B" grouping (45), gives you only the 2 most active contracts, and it excludes cash prices.

The "A" Commodity portfolio at $75 monthly gives you every current March, June, September and December contract for gold, silver, the US dollar, 90-day Bills and T-Bonds.

You also get the Share Price Index, the All Ordinaries Index, the Industrials Index, the Metals and Minerals Index, the All Industrials, the US Dollar Mid-rate, 90-day Bills, the Two-year T-Bond Index, and every current contract for steers, and wool.

The "B" Portfolio, at $45 a month, gives the 2 most active contracts on those contracts listed above. For the financial markets, this will usually be the 2 nearest March, June, or September contracts. For the rurals, this will usually be the third trading month. Cash prices are excluded from this group.

You collect the Research Technology market data after 5.30 every evening by telephone and modem through a call to Sydney. A modem is a device that converts the digital signals in your computer into analogue signals suitable for

Market Analysis Software

David Kynoch sells his investment software for the Apple II. He has begun to stock the Apple IIc, but says that he will use this in the lower end of the market.

"Not that it's an inferior machine, it's just that it won't run some of our software," he says.

The large number of expansion slots in the Apple II, give it the edge, according to Kynoch. He cites such additions to the 8-slot Apple II as a board for real-time quotes access from the New York, Chicago and Sydney Futures Exchanges, and an accelerator card which lets the Apple II run 3 times faster.

"It's an incredibly flexible little machine," he says. "There are a lot of third-party manufacturers, and lots of cards."

"The problem with the IIc," he says, "is that it's sealed. You can't plug in extras. But for a first-time user or as a home machine, its OK."

Kynoch suggests 3 hardware configurations for computerized investment, ranging in price from $2,450 to $5,725, based on the Apple II. He may soon offer his software configured for IBM. Software prices are extra to hardware, and you choose these to meet your investment needs.

The 3 suggested configurations are:

THE SYSTEM TRADER

(Includes $50 worth of current data – commodities or shares)

Comprises: 64K Apple IIe, one disk drive, 12" high-resolution green or amber phosphor monitor.

The system will run any of the ORION programs. You may establish and maintain your data base, run automatic trading systems, optimizations and plot charts on the screen. With the addition of a printer, you may produce printed copies of the results achieved on the screen.

Price: $2,095.

THE ANALYST

(Includes $75 worth of current data – commodities or shares)

Comprises: 64K Apple IIe, 2 disk drives, set of hand controllers, 12" high-resolution green or amber phosphor monitor.

In addition to running all the Orion programs, The Analyst will operate the sophisticated Compu Trac system. With the addition of a printer, you may produce printed copies of any charts or reports.

Price: $2,450.

THE SENIOR ANALYST

(Includes $150 worth of current data – commodities or shares)

Comprises: 64K Apple IIe, 2 disk drives, set of hand controllers, 12" high-resolution green or amber phosphor monitor, send data acoustic coupler, Apple Super Serial Card, IDS Prism 80 high-speed grahics printer, Grappler grahics interface card.

A complete outfit for gathering data from world-wide data banks, automatic operation incorporating printed reports and charts, and the ability to run all the software.

Price: $5,725.

From page 27

transmission along a telephone line.

The Research Technology Microdata lets Apple II users collect commodity and share data daily.

In 1979 David Kynoch, the founder of Research Technology, decided to leap into computerized investment. In that year, he had done well in gold. "I made a lot of money in commodities, back in the heady gold days of 1979, but I knew it wouldn't last," he says.

Kynoch decided that he could sustain his winning streak and trade successfully only if he had more data to work with.

So he went to the US, found Computrac software, and became the 77th user. Computrac now has 2,500 users.

"It sounds stupid," says Kynoch. "But what happened to me is what happens to most people when they first use investment software – everything clarifies itself. You can see how things work. It's immediate. Then you can latch onto a couple of indicators that suit you, because you know where the markets are going."

What you get

For each commodity contract you get open, high, low, close, estimated volume for the day's trading, the previous day's actual versus volume, and the previous day's actual open positions.

Research Technology offers 800 industrial, mining, and oil shares from the Sydney and Melbourne Stock Exchange. You pay $1 a month a share for the daily data, plus $2 for each different commodity or share.

Research Technology also provides an historical data disk for financial futures, foreign currency, precious metals, industrial metals, grains, beans, bean products, meats, and fibres from 1975 to 1981. Each unit costs $59.50, or as a library, $470.

I. P. Sharp offers the same data, plus more in-depth research material, to IBM-PC users. Here, I. P. Sharp holds both the data and the processing software in its Canadian-based information bank. You pay for the time you spend using it.

With Research Technology, and I. P. Sharp, your computer can automatically collect the data every afternoon, and automatically chart or analyse it – if you have set it up to do so.

The difference between the 2 services is that with Research Technology Microdata you use off-the-shelf software, which you buy from the company or from elsewhere. With I. P. Sharp you pay for the time you spend using software which is already on its much larger computers in Toronto.

Research Technology is based in Sydney's Pitt Street.

SORRY, JEANETTE!

Last month's report on Jeanette Blomfield's SLIM library software said Jeanette started at the Australian Finance Conference as a file clerk.

This was wrong. Jeanette has been a professional information specialist for some 12 years, and when she started with Australian Finance, it was in a professional capacity.

– Editor

Software for small-time traders

An ever-increasing range of investment software is available for personal computers. The following are part of the range sold by Research Technology and give some indication of what is available to the small-time trader. They may be purchased separately from the hardware sold by the same company.

MESA

Mesa is a forecasting program and a trading system in one. It produces graphical forecasts of share or commodity prices. These forecasts can be used both in their own right, and as a check on the predictions made by other programs. Data file maintenance system, lets you manually update the latest prices. It is compatible with both Compu Trac and Investors Toolkit data files. Requirements: Apple II, 48K, 2 disk drives, IDS Prism printer or Epsom FX80/FX100 and Grappler plus interface card.

Price: Program and manual, $485.

QUICKTRIEVE

Quicktrieve is produced by Commodity Systems Inc in the US and is primarily designed for easy collection of commodity and share data from its data bank. A set of utility programs create and maintain data files and produce a chart. If you are trading the US commodity or share markets then this package will allow you to collect, store and display data. It accompanies either Compu Trac, Investors Toolkit, or Mesa – particularly the Investors Toolkit packages, because of their lack of data file maintenance facilities. Requirements: Apple II.

Price: $150.

INVESTORS TOOLKIT BY ORION

This is a collection of about 30 modular programs accessory to the Compu Trac system. They perform specific functions, such as finding the most profitable trading system for a market, or "optimization". Graphics capabilities are available. All are compatible with the Compu Trac system. Requirements: Apple II.

Price: $72 to $997.

THE COMPU TRAC SYSTEM

Compu Trac analyzes share C & S or commodity markets. It is a complete package, with special indicators for analysis of both share prices and commodity markets. You can create all types of charts, with many different indicators for short, medium and long term forecasting. It will test the historical profitability of an indicator, when applied to the market of your choice, and produce a bottom line profit or loss figure, in dollars. Data files is included and accounting package. An automatic mode allows the computer to analyze markets while operating unattended. Requirements: Apple II or IIe.

Price: $2,250 & $300/yr maintenance option.

Lou tracks stocks in a garage

Lou Solomon and his trusty Digital PC put in a 50-hour week keeping tabs on the stockmarket for others. In fact he's so busy, Lou hasn't time to invest himself.

It's 5 am in Mill Drive, North Rocks, the heart of comfortable Sydney suburbia. Sweet sounds filter out from a 2-car basement garage. Takako Nishaki plays the Dvorak-Kreisler *Humoresque*.

Here, among the iceskates and golf shoes, chartist Lou Solomon pencils in new data on his 2-metre green grid-paper stock-market charts. A Digital Rainbow monitor sits on the shelf above the long table, flickering with the latest hot-to-go *Wordstar* update of Solomon's weekly *Rodborough Technical Report*.

Sue and Lou Solomon between them put in 64 hours a week to produce financial analysis for Sydney brokers and investment advisors from their computerized basement.

Both have full-time jobs; Sue (Master of Science) as a Suzuki-style music teacher, and Lou (Bachelor of Engineering) in the RAAF.

Lou started out with a US Alspa computer with an 8-inch disc drive 2 years ago. Now he has a Digital Rainbow, with a Digital Letterwriter. For software he uses *Multiplan*, *Wordstar* and the communications package, Compac.

He starts to chart the moment the indices close on Friday afternoon – "family commitments permitting," he qualifies.

Solomon admits to spending a 50-hour week at his charts.

He likes the Digital, and the fact that the system unit fits under the desk. This leaves him room to spread out charts on his 3-metre white formica desk. The monitor sits above the desk on a shelf.

The Solomons' charting service is now one year old. While Lou Solomon won't reveal the secret of his "confidence" charting method, which involves an amalgam of 11 sub-charts for every index, he's willing to talk about what he does prior to this stage. Financial data from *The Sydney Morning Herald* and *The Australian Financial Review* is dropped into a *Multiplan* model, which makes a set of calculations which relate the current index figure to historical figures.

Lou Solomon *and his trusty investment advisor.*

A new aspect of the Solomons' system is the *Compac* bulletin board software from Telehome Computing. They now send their reports down the telephone line to their clients' computer systems instead of making a 5am rush hand delivery.

Lou's analysis is divided into 2 parts – the indices, and the option stocks. He records on a graph price ranges and turnovers and presents his information in the form of percentage changes which predict market movements. Sue Solomon spends 2 hours a night keying new figures into the *Multiplan* models. This makes 8 calculations for each index. These are then printed out on the Letterprinter, with an interpretation page for each index.

Lou then constructs the new weekly Rodborough Technical Report by copying last week's *Wordstar* file, and overlaying the new data.

"My analysis is purely technical," he stresses, but he admits that this technical picture can be enhanced by experience. "For example, you have a technical picture that develops with time," he says. "You start suspecting something, and the suspicion grows toward certainty."

The Solomons don't practise what they preach – yet. One reason for this, Lou says, is "burn-out". By the end of a midnight charting session, he doesn't have energy left for anything else.

He'd like to run a full-time charting business. When that day comes, then he'll put his money where his charts are.

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The Future State of the Art: Computer Sight

The state of computer input art is getting better, but speech recognition technology still has a long way to go. What we need now is a magic wand to give sight to our computers.

Do you ever marvel at how fast you can read? It's quite remarkable, really. The average reader tools along at about 500 words per minute. That's about 3,000 characters per minute, or 50 characters per second. Better readers can attain speeds of 800 to 1,000 words per minute, and speed readers can plow through text at truly astonishing rates.

I admit that by many standards these are not blazing speeds. You'll finish this piece in about 3 minutes, not including the time many of you may take to reread it. However, when you consider how much time it takes to write a piece like this, you may begin to better appreciate your own talent. When I type from handwritten text, I can usually sustain a speed of about 45 words per minute, and occasionally I hit peaks of 75. This rate amounts to only one-tenth of your reading speed. But this is not my typical method of writing. I, like most of my associates, actually write while I sit in front of the computer. Over the past 2 years, I have clocked my on-line writing time at about 500 words per hour—only 1/60 of your reading speed. This slow pace is the result of thinking and revising and revising and thinking and correcting typos.

I could potentially write a bit faster than I do. I could dictate the first draft of an article perhaps as fast as 120 words per minute, which is equivalent to the best speed a skilled stenographer could attain. Actually 90 words per minute might be more realistic. For the sake of it, I'll call it 100; that's 6,000 words per hour.

> Computer sight will be more helpful in the short run than any other single form of data interchange.

The speed with which we read may be one of the major frustrations that confronts computer users when they attempt to enter information that takes up more than a page or so. Why? Because compared with all but the most expensive computer data entry technologies (such as page-oriented OCR), reading is extremely fast. Today, the vast majority of data input is still accomplished with the typewriter keyboard, and the QWERTY one to boot—not even the faster Dvorak. Neither keyboard allows the operator to input data at speeds that even approach average human reading speed.

As it turns out, this, in fact, is the next big technological hurdle, and it is probably the last one for some time. (If we are to believe the science fiction writers, the step beyond that is direct connection to the brain, but presumably that lies quite far in the future.) That speech recognition is being studied or even considered within the realm of possibility is amazing in itself. The question is whether or not such technology is feasible.

Currently, a great deal of work on the dual problems of speech generation and speech recognition is in progress. Of the two, the former is considerably simpler. It is only a matter of time before computers will be able to speak clearly (that is, non-mechanically). They are already capable of reproducing digitally stored speech with a chilling accuracy, as anyone who has a speaking coffee maker that says "Good morning, darling," in a voice of the appropriate gender can attest.

Speech recognition is several orders of magnitude more complicated, and technology has not come too far in this area. Judging the current state of the art it appears that a system can be trained to recognize words and phrases spoken by an individual, but that same system is mystified by a different person speaking the same vocabulary. In fact, the same person's voice on another day or with changes in inflection or tone can confuse

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the system. The manner in which we casually chat is nothing more than gibberish to today's recognition systems.

This technology is hardly the stuff of which electronic stenography is made.

Three things are needed to successfully build cost- and performance-effective speech recognition systems: algorithms, performance, and processors. The computer scientists, engineers, and scientists still have a great deal of work to do. In order for a cohesive set of algorithms to evolve, much more has to be learned about speech recognition. These procedures can then be applied to effective, real-world systems. There is no escaping this requirement, and, truthfully, we are not terribly far along.

The next factor is performance. The speech recognition process involves a good bit of digital signal processing, which typically requires a tremendous amount of computing power. The other major piece of work is pattern matching and analysis, which requires even more time than signal processing. To engage in such activities, a computer must be able to perform at extremely high speeds.

This performance requirement mandates both special-purpose processors (designed with instructions for signal processing or pattern matching, for example) and parallel processing. In order to perform work in parallel, multiple processors are probably needed. The number of processors needed might be measured in tens or hundreds, which would make cost a limiting factor. Low-cost, high-speed microprocessors designed specifically for such tasks are an obvious goal.

This goal may sound attainable, and I suppose it is if we ignore the issue of cost. But compared with a complicated, multimicroprocessor system, today's IBM PC is simply a child's toy. It also costs about $3,000 (ignoring such speech-independent amenities such as displays and printers), and it cannot begin to recognize the human voice. Suppose a 20-MHz 8086 (if one existed) cost $25 (a low price for a part like this). How many would you need to make recognition technology feasible? How would the processors be connected, how much power would they require, and what software would control them?

The manner in which we casually chat is nothing more than gibberish to today's recognition systems.

The questions about operating a multiprocessor system do not yet have satisfactory answers. In short, today is not the day for everyman's speech recognition, both by virtue of cost and lack of knowledge.

If Computers Could Hear . . .

Even if computers were capable of speech recognition, something would be lacking. If we consider only the language, not the pictures, computers will need the ability to see, too.

Actually, this is something of a breakthrough. In our search for alternative forms of computer input and the ultimate replacement for the keyboard, we would certainly like to avoid mechanical processes like moving fingers. This leads us directly down the path toward computer hearing. But as I've indicated, we haven't made that much progress. Significantly greater progress has been made in the area of optical character recognition, however, and the industry even has (by computer industry standards) a long history. We are much more likely to find short-term solutions that will allow us to have computers read the printed word.

How can the need for computers to see be considered a breakthrough? Take, for example, a program printed in this magazine. Imagine the thousands of readers who key it in and remember typing a program listing is far slower than English language typing. Let's see, thousands of readers times ten fingers times 3,000 characters in the program is, uh—well, you could light a small city with all that energy. Wouldn't it be nice to wave a wand over the page and have the program sucked right in?

The blind are using devices like this today, although they are designed to either speak the letters or convert them to a tactile sensing device in which the blind person's finger rests. They are quite accurate, can read almost any style of type, and are invaluable reading aids to the sightless. They are also capable of feeding the data directly to a computer.

However, these devices are not without problems. If they miss a letter in a word, the user can often mentally fill the gap. But pattern recognition like this is beyond the capability of the inexpensive desktop computer, so even greater accuracy is required. They are also expensive at the moment, but not so expensive as to make them unreachable if the need for them became apparent. The point is that the technology does exist; it needs refinement. As a beneficial side effect, once these devices were widely available, the price would drop.

If you think about technology like this for a moment, you'll understand its merits. Consider how many times you transfer data from the printed page to the computer. Need a quotation for a paper? Wave the wand over the original! Not sure how to spell antidisestablishmentarianism? Crack your dictionary and wave your wand over it! Do you want to add customer names and addresses to your accounts receivables? Wave a wand over the return address on their envelopes! Plagiarize the *Congressional Record* for your next speech? Take the wand in hand!

I believe computer sight will be more helpful in the short run than any other single form of data interchange. That's not to say we will or should not continue to search for speech-recognition technologies. But reading the printed word (or number) is much closer to reality, and, in its own right, tremendously useful. ■

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Local Area Networks

SHARING, TALKING, SUPERFAST COMMUNICATIONS...

...the PC world can become a whole universe where it counts (on the desk in front of you). In Australia there already are 50 LANs. Trevor Housley has the good news – and the bad.

Photo: Tim Hyson. Thanks to Dick Smith's, Bridge Street, and to Horizon for the Corvus Concept Workstation.

A LAN is a short-haul, high-speed communications network that can be shared by a number of users. Operating over a limited distance – usually within your own premises – LANs allow anything connected to the network to be connected to anything else.

Sounds great, doesn't it! Well, let's see what LANs are all about for personal and small computer users.

The development of LANs arose mainly because of 2 factors.

First, in the US satellite common carriers started providing communications services in competition with the Bell system. A satellite link is capable of delivering very-high-speed data signals to the rooftop of your building. These signals could be as fast as 60 million bits a second.

This is great, but what do you do with 60mbps on your rooftop? The normal building wiring is not capable of handling anything like that speed. The conventional wiring in a building is the twisted pair wires that are used to connect telephones back to your PABX. These wires may be able to carry, perhaps, up to 1 million bits/second.

So, a new form of communications was needed to distribute high-speed communications within a building.

At about the same time, the automated office concept was developing. An automated office includes the capability of having any piece of office equipment communicate with any other piece of office equipment. At the heart of the automated office, therefore, is a communications network – a Local Area Network.

Apart from some special implementations, we have a long way to go before we can have a fully automated office. The communications technology, however, exists and about 50 different LAN products are now on offer in the Australian marketplace.

Most of these products are aimed at personal computer users. More and more businesses are installing PCs. After the initial euphoria of using a PC to extend the productivity of an individual, people are coming to grips with some of the problems of having multiple PCs in an organization.

The peripherals are expensive – quite often they cost more than the PC. Take a letter-quality printer with a good range of paper-handling options; or take a hard disk capable of storing 10, 20 or 30 megabytes. These things are not only highly desirable, they are expensive.

We usually cannot afford to have this class of peripheral dedicated to a single PC. Also, due to the way the PCs are used, these peripherals are idle for a great part of the time.

It makes sense, therefore, to share these expensive peripherals between a number of users. This is where the Local Area Network comes in. Most LAN products aimed at PC users allow the PCs to share expensive peripherals. In the process of providing this capability, the networks usually also provide a simple electronic mail/electronic message service to the PCs on the network.

Network structures

There are 3 basic structures for LANs. The simplest is a Star which has a central network control unit which communicates with the individual devices, such as PCs, via point-to-point connections. The second is a Bus structure which has a single cable – maybe coaxial or perhaps twisted pairs – which connect to each device in the network. The third class is a Ring which provides a continuous communications path between all the drives on the network.

Most LANs are either Star or Bus because these are generally easier to implement and to install than a Ring.

Usually, there is a network control unit which is a computer itself with hard disk(s) and printer(s) attached to it. These are the peripherals which will be shared by the other PCs in the network. The control unit is often called a file server or file sharer and, if it has printers attached, it may also be called a print server.

The LAN contains software which allows the individual PCs to communicate with the network control unit and thus access the files and/or printers. Generally, the networks do not permit direct communications between the PCs. If they wish to communicate they must do so via the network control unit.

An electronic mail/message facility allows this to happen – the PCs each have a "mailbox", which is an area of disk storage on the control unit. PC users can put messages into other PC mailboxes and, of course, they can receive messages from the others. So, the network provides a simple means of communication between the PC users.

The simplest way to use the shared files is for the PC to regard the central file space as an extension of its own floppy disks. The PC may have 2 floppies, designated drive A and drive B. The network storage may appear to the PC as disc C, D ... etc.

Of course, the network software should allow the users to co-exist without interfering with each other. More importantly, the software should prevent users from accessing other users' files

without authorization. Some security software incorporating passwords should therefore be available.

Another advantage of the shared file is that PC users can have access to a common bank of software. Rather than each user having his/her own software disks, the software can reside on the shared disk and be called into use when needed.

Problems with this include the queston of copyright. If you are using package software you should be sure that your agreement with the software supplier permits you to share the software between the PCs. (In most cases, the software is licensed for use with a particular PC. If you have several PCs you should have purchased multiple copies of the software.)

Second, the software may not be able to support several users at the same time, so each user would load a copy of the software into his/her own PC and execute the software from the disk in the PC.

Another advantage of the LAN is that it allows users to share a common database. Pricing information, or inventory details, for example, could be made available to all users from a single file. This simplifies the task of distributing updates and making sure that everyone uses the latest information.

However, more problems could arise because the network software must be capable of supporting multiple users and of supporting record locking. In simple terms, this means that 2 or more users should not be able to have free access to the same record at the same time.

If both users are reading a record, say the price of a part, it is OK for them both to access that record. On the other hand, if one user is in the process of updating the record, ie modifying it, the second user should not be allowed to access the record until the first user has finished. Likewise, if both users are attempting to update the same record, unpredictable results could occur.

These problems are well understood in mainframe computer systems but recognition has not necessarily made it to all LANs.

Compatibility is another question. There are standards around that define the operation of LANs. There are many

options available and it is possible to make products which conform to the standards but which are incompatible.

The standard generally defines the basic communications functions of the LAN, ie how one device can talk to another, while the software that is necessary for PCs to make good use of the LAN is not standardized.

A lot of this software is relatively new and, as a result, can be expected to be less than perfect. This means that, as well as the likelihood of having bugs in it, the range of features is likely to be limited at first. In a rapidly developing area like LANs, this is not necessarily a big problem because new features will be forthcoming soon.

The LAN software must, however, be robust. It is no good if the control unit falls over periodically and makes all the users fall over with it. It is no good if mail messages get lost or if users find a way to access data without authority.

One trap that is difficult to foresee is that, in order to incorporate LAN software, your supplier may modify your operating system. These patches may prevent you from running a piece of software that you may have been able to run before.

Also, the additional circuit board(s) that may be required in the PC to interface the network could use the same interrupts as other boards, so switch settings inside the PC may need to be changed in order for the system to continue to work with the old and the new software.

This is another reason for testing the network in a way that is as close to your own environment as possible before you buy.

Also it is no good if the system caves in too quickly as the number of users increases. Like most communications systems, the behaviour of a LAN is non-linear. As the number of users increases, the performance of the network degrades dramatically. Relative degradation will vary from system to system. The buyer should be aware of this degradation.

Also, the fact that a LAN allows you to connect a large number of devices does not mean that all can be operating at once. The number of devices that can be supported is a function of the addressing system used. The number of devices that can be active at one time is related partly to the communications method employed on the LAN; partly to the software used in the control unit and the speed of the hard disks; partly to the users' application – how frequently do the individual PCs access the control unit.

Unfortunately, there is no easy way to assess whether a particular product will satisfy your needs. The best thing is to see the network working under conditions that are as close as possible to those you will encounter in real life.

Trevor Housley operates a computer consultancy in Sydney.

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LANs = PC + Mainframe Plus..

LANs are great but a proliferation of standards reduces productivity and promotes extra costs. But LANs are still fabulous value.

Local Area Networks (LANs) link computers throughout a single site, such as an office or a factory. At present, the market for LANs is booming.

As Adam Gatt of Australian Personal Computers Corp puts it: "Until now, personal computers have been used for stand-alone applications, for accounting and word processing. Now the emphasis is switching to communications. Networks allow a better utilization of resources, sharing of expensive disks and printers between users, and common access to information files."

Unlike multi-user computer systems which support a number of workstations, LANs combine the convenience of independent personal computers with the power and economy of shared resources. Shared disk drives eliminate constant swapping of floppy disks and allow a number of users to access the same information and use the same applications programs. Costs are reduced by expensive printers and other peripherals being shared and productivity increased by faster communication between users.

The proliferation of networking systems is not without problems, however. A LAN is a complex combination of hardware and software, and it sometimes seems that each manufacturer is determined to set its own standards. In the US, there are some 100 distributors of LAN systems with 70 different packages. The Australian market supports more than 30 systems, but the number of manufacturers involved is rapidly growing.

Don Loughry is project manager for Hewlett-Packard's information network division and chairman of the Institute of Electrical and Electronic Engineers (IEEE) committee working on computer network standards. He sees agreement on standards as the single biggest factor in cutting costs and increasing productivity.

"Standardizaton is essential, since it allows machines from multiple vendors to be connected to one common system and for users to be able to connect to a single medium," he says. "We will see an evolutionary progress towards more LANs at costs orders of magnitude lower

than we have today, as standards firm up".

The following is a simple guide to LANs:

What's involved

Local area networks can be classified in many ways such as by potential size and types of computers that can be installed, speed of information transfer, method used to transmit information and resolve competing claims for transmission, type of cables required and cost of providing a connection.

In general there is a trade-off between cost and capacity, but initial installation and future expansion must also be taken into account. Connection costs quoted as "per user" may not include the cost of installing a cable, which can be expensive. Conversely, an economical "low end" network is an expensive choice if it must be totally replaced in a few years' time due to expanding demand.

Computer networking requires software adapted for multiple use.

LAN configurations

The physical configuration or topology of a network determines reliability and to some extent the functions that can be performed. There are 3 major configurations – the Star, Ring and Bus.

Star configuration consists of a central network controller with separate communication lines radiating outwards to individual workstations. This configuration was pioneered in large multi-user computer systems and is exemplified by a telephone network. Your in-house PBX telephone system is a star network, a fact which gains in significance as computer applications and communications converge.

Advantages include centralized control and ability to monitor network traffic. The corresponding disadvantage is that messages between workstations must pass through the central controller, which becomes the key to the reliability and capacity of the system. Need for a separate connection between each workstation and the controller means a proliferation of cables.

Ring configurations do not include a central controller. Workstations are connected in a circular path, with messages passed from one workstation to another around the ring until they arrive at their destination. Since each workstation must transmit as well as receive messages, reliability depends on all devices connected to the network functioning properly. Advantages are rapid access to all workstations and ability to use any workstation as a resource, or "server", for the others.

The bus configuration is the most common. It involves one main information throughfare which can be tapped at any point. Workstations can be added or removed without affecting overall performance and wiring is simplified.

Conflicts

Ring and bus topologies have a common problem. Since all devices are connected to one communications medium, 2 stations attempting to transmit information at the same time will conflict, resulting in a garbled message. Your LAN must adopt some method of dealing with conflicting requests for access to the network. The method used is one basis for classifying networks.

Possibly the best known though not

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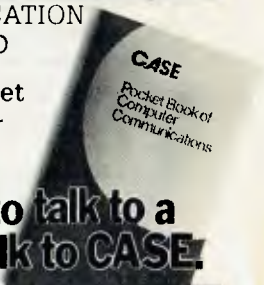

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necessarily the most widely used LAN is Ethernet, based on developments by Xerox and supported by Intel, DEC and more than 40 other manufacturers. Since it forms the basis of the IEEE 802.3 LAN standard it can be used to illustrate the issues involved.

Ethernet uses a scheme called "Carrier Sense Multiple Access/Collision Detection" or CSMA/CD. Each station on the network listens for another transmitting station. If the network is free the station transmits its message, including a destination address and an error detection code.

If 2 stations start transmitting simultaneously the messages collide, scrambling the information. Ethernet detects this collision by reading back the state of the cable as the message is transmitted. If a collision has occurred, each station waits a random length of time and then attempts to transmit again. The random delay decreases the chance of the stations again transmitting simultaneously.

Ethernet has 2 problems.

The first is that as stations are added to the network and traffic increases the number of collisions grows and each station spends more time waiting for a clear line. Although commercial Ethernet installations can in principle support up to 256 workstations the practical limit is closer to 100. Best results are achieved with a maximum of around 40 stations.

The second is important only where a network of computers is used to control a manufacturing plant. Process control applications frequently depend on precise timing. Ethernet cannot guarantee that a message will be sent within a given time.

Another method of resolving conflicts does not suffer from this shortcoming. Called "token-passing", this method uses a special code, or "token" which gives a station permission to transmit. When a station has information to transmit it waits until it receives a token and then replaces the token on the network with its message. Arcnet, pioneered by Datapoint and adopted by Tandy, Davong and Wang, is a token-passing network.

Cabling

The type of cable used in a network affects both the carrying capacity and cost of an installation. Capacity of a cable is determined by the "bandwidth", which can be likened to the diameter of a pipe. The higher the bandwidth the more information can be sent down the cable at any one time.

Coaxial cable, as used for television relays, provides the widest bandwidth. Using coaxial cable it is possible to transfer data at a rate of 10 million bits a second which, allowing for error detection and address "packets", is equivalent to the transfer of around 500 pages of information a second. Because of materials used and construction methods required, coaxial cable is expensive and may require special installation techniques. As a rule of thumb, cabling costs alone will work out at around $1 a metre.

Coaxial cable system classifications can be subdivided on the basis of the frequencies used. Ethernet uses a "baseband" transmission mode, which means that the range of frequencies transmitted starts at zero and increases from that base.

The alternative mode is "broadband" transmission, in which information is superimposed on a "carrier wave" of a much higher frequency. Since coaxial cables perform better at these frequencies, signals can travel much farther without unacceptable fading.

Broadband systems can also provide a higher bandwidth than baseband systems, so more information can be transferred on a single cable. One example of a broadband system, Wangnet, can provide simultaneous channels for voice, data and video signals.

Broadband systems typically require a source of high-frequency signals, and amplifiers that can operate at these frequencies. Since signal levels are more critical at these frequencies, installation of a broadband network until recently required such special techniques that each network was virtually custom-built. But now Wang has released Fastlan which is a "user installable" version of a basic Wangnet.

LANs can also be built around "twisted pair" wiring – the type used for telephone connections. This is cheap and easy to handle but provides a low bandwidth and hence less information-carrying capacity. Maximum data transfer speed is around one million bits a second, although lower rates are more typical. As a standard of comparison, a typical floppy disk drive transfers information at 250K bps (bits per second). A network operating at this speed gives the same response time as a floppy disk system.

Optical fibres are the wild card of networking. Because they transmit light rather than electrical signals they have an even higher bandwidth than coaxial cables. Speeds of up to 100 million bits per second have been reported by experimenters – way above the requirements of even the largest offices. Optical fibres are immune to interference from other sources of electrical signals, but are expensive and difficult to install. The cost is mainly due to low demand however, and as demand increases is likely to fall. In 5 years' time optical fibres may be standard in very-high-speed networks, despite complications caused by the need to convert electrical signals to optical signals and back again.

Peter Vernon is a Sydney-based freelance consultant.

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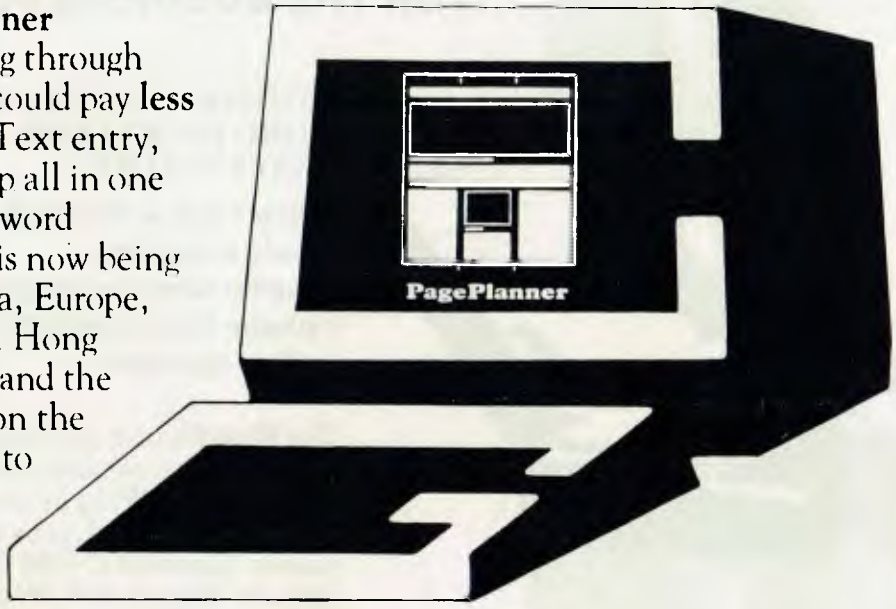

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NETWORKS – A SECURITY THREAT

Computer networks and communications mean major security threats, according to David Towey, managing director of Sydney's Ran Data Communications.

Towey cites Telecom Australia's Austpac as an example of where a wiretapper can hook into a system to extract confidential information.

He says a growing number of network executives are concluding that the most serious threat to their systems is the one that has yet to occur – the wiretap.

The ability of the wiretapper to quickly effect the movement of large sums of money off a banking system easily offsets the lower probability of the crime.

Towey says there are two basic techniques to prevent wiretapping – message authentication codes and encryption

Encryption is another matter. It involves changing the message before transmission, usually by applying a computer-generated algorithm.

Unfortunately, encryption, although offering an almost perfect wiretap-prevention method, is not as widely used as it could be.

This is mainly attributable to a lack of education on the matter and it is only through more education that we will be able to see more secure networks being implemented around this country

Ran Data Communications supplies line encryptors mostly to Federal and State Government departments and banks.

However, Towey says, the general commercial sector is becoming more and more aware of the need for encryption and that area of business is growing.

Major LANs available in Australia are listed on page 112.

Beware of Imitations

Computer buyers should be wary of systems that purport to be Local Area Networks (LANs) but do not in fact offer the advantages of true LANs, according to the national marketing manager of Daro Office Systems, Robert Usenich.

Mr Usenich said some systems being offered as LANs did not support true file or resource sharing. Neither did they usually have true record locking which allows several people to look at the same file together, he said.

"True LANs are very affordable and are able to achieve cost-efficient solutions within a diversity of applications," Usenich said. "This is not just a pie-in-the-sky claim."

Digital Microsystems (LDMs) Products and Sand Systems, which are distributed in Australia by Daro, have both small and large LANs that are operating world-wide.

DMS pioneered the concept of local area networking, according to Usenich. The founders of DMS, John and Patti Torode, collaborated in 1974 with Gary Kildall to evolve the first micro floppy-disk system. Kildall is the founder of Digital Research and he and John Torode worked together to develop the CP/M operating system.

There are more than 500 Hinet LANs currently running and more than 10,000 installations relying on DMS products.

In Australia, Daro has installed a 26-independent computer network at Footscray Institute in Victoria, sharing 2 central 23 megabyte hard disk drives. Each computer has floppy disks for back-up and program loading.

At the other end of the spectrum, William Pearce Pty Ltd, a medical equipment supplier, has installed a 4-terminal LAN that covers invoicing, inventory control, debtors/creditors and general ledger. All this has been integrated to maximize customer service and keep control of a vast array of medical stock.

However, as Australian distributor, Daro felt it was important to stress that true LANs did address the 3 basic levels of electrical interface, transmission protocol and format of information being transmitted.

In heavy-use applications, LANs eliminated the overload and consequent down-time associated with central processors.

Usenich said that the inherent economy and flexibility of LANs were being realized by Australian businesses and had resulted in an increasingly-larger market share.

DMS products ran both 8 and 16 bit technology to interact with any of the major operating systems, enhancing LAN flexibility even further, he said.

SHARING COSTS IS NICE

Using a LAN can make "good business sense", claims one of the major suppliers, Telecomputing PCS. Its clients include Hayden Engineering and Mercedes Benz Australia.

Telecomputing PCS's Tony Shih, of Sydney, markets a system called PCnet. One advantage of the system is peripherals sharing, such as hard disks and printers. Users can share the cost of these among several PCs. Files and programs can also be shared, and often back-up facilities and procedures can be centralized.

Shih says the PCnet product allows users to increase the range of applications that can be handled off their personal computers. He says networked micro computers build multi-user systems, a job traditionally reserved for and performed by mini computers.

Initial costs can be reduced and systems expanded as required for increased workloads.

On offer also are network utilities such as print spooling, multi-tasking, file-locking and communications with IBM lookalikes.

The Odd Couple Tackle The Land

Farmers in some of the remotest areas of Australia are enjoying the benefits of computerization – thanks to the efforts of 2 young Queensland whizkids.

Cast a casual eye over the curriculum vitae of Ralph Shannon or his partner Peter Robertson, and at first glance you won't see a great deal in common.

However, these 2 young Queenslanders have pooled their diverse talents and come up with a particularly successful combination.

Ralph Shannon is the ideas man and does most of the talking, describing as he goes the overall future strategy of their computer consultancy, Shannon Robertson Systems. He studied business management at the Queensland Institute of Technology, but declares that his roots lie firmly planted in the land – he was born and raised in central Queensland where his family have farmed since 1872.

Peter Robertson, on the other hand, is city born and bred. He may not have quite the same breadth of conversation but what he does have is a degree in mathematics and a master's in medical physics. Peter understands computers.

They both topped their respective years at QIT – but the computer industry is used to whizz kids. Whizz kids who can market, manage and make a profit, however, are another matter.

In less than 4 years Shannon Robertson Systems, based in the small country town of Nambour, has become one of the most important developers of agricultural software in Australia. And more recently, using its experience in agriculture as a base, it has developed a range of software for real estate agents, taking a major share of the single-user market in Australia and New Zealand, including an estimated 80% of the Sydney single-user market.

The remainder of the Shannon Robertson workload comes from specialist small business systems. The list of clients varies from Bombay Rock, the rock concert venue on the Gold Coast to the more mundane, but isolated, Longreach Tyres in the west of the State.

With the formation of the company, the original idea was to provide advice on business management and computing to those involved professionally in agriculture. But as Ralph Shannon points out, it very quickly became apparent that, as far as computing was concerned, there were no suitable agriculture systems to consult on.

So, they set about writing and developing their own software. Peter wrote the systems based on Ralph's knowledge of the industry and then they would jump in the car and head off to some of the remotest parts of Australia to sell it.

Nowadays, they employ 4 full-time programmers and utilize a network of 7 branches and 7 agents throughout Australia and New Zealand. In the early days they wrote specialist systems for individual farmers but at the same time they developed a series of software packages they called the "Saltbush" range which has since become the mainstay of their business.

The fact that they were prepared to go to places so far afield, they say, gave them the edge in a great percentage of the available market.

"Interestingly enough," says Ralph Shannon, "the people in the remotest areas, such as the west, have perceived the need for a computer more readily than their counterparts nearer the city. The fact that they are so far away from their accountants, etc, has driven them to the computer."

Because of the geographical isolation of many of its users and their inherent need to be self-sufficient, Shannon and Robertson has aimed to provide systems

Our Personal Computer is so compatible, even our opposition speak to us.

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What it means is that up to 64 PC's can be linked for information sharing.

All individuals in the network are therefore working with the same facts.

And importantly, they can share expensive peripherals such as printers and plotters instead of buying one for each work station.

Using NCR's Decision Mate Personal Business Computer and Decision Net eliminates the problem of upgrading offices with incompatible equipment, because Decision Net also links IBM, Apple and other PC's to the Local Area Network.

But there's more to us than personal computers, NCR provides automatic teller machines for banks as well as an Australia-wide Service Centre Network.

NCR develops, manufactures, markets, installs and services total business information systems, from small business systems to the most powerful general purpose processors and event-driven transaction processors with the broadest range of terminals, peripherals, services and software in the industry. That is NCR.

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that are easy to use and require little in the way of back-up after installation.

With the trend towards 16-bit microcomputers Shannon Robertson Systems adopted the CPM and MS/DOS operating systems so that its software could be easily transported among all the newer hardware releases.

At the same time, for reasons of easier and better support for its isolated users, the company has been installing Toshiba equipment almost exclusively. The track record of these systems, Peter and Ralph say, prove the strength of that decision.

The Saltbush range of software has been developed around a general agricultural accounting package. As most farmers, however specialised their particular branch of the industry is, require the same sort of accounting system, the Saltbush accounting package is flexible enough to cater for all clients, be they sheep farmers, cattle producers, beef and horse studs, or potato, grain, and cotton growers or horticulturalists and nurseries.

In addition, the Shannon Robertson Systems has a range of specialist packages and from these selects a combination most appropriate to the client's needs.

Applications are varied and a stud recording package, a livestock and paddock listing package, a system to help test the fleece of sheep, and another to predict the yield of crops. Further packages provide financial modelling, tractor or fertilizer purchase modelling or gross market analysis. And others can supply the farmer with recreational activities and games – an important extra for the isolated user.

The most recently developed agricultural package is a "lot feeding" system which Peter and Ralph believe is the first of its kind in Australia.

The system, which has been completed for 12 months, has been installed for the past 6 months at the Aronui Feedlot, Dalby. The fine-tuning period is just about over, Peter and Ralph say, and the Aronui system is well under way.

Electronic scales weigh out a predetermined optimum mix of feed for each head of cattle, at the same time updating the information stored in the compter. Around 14,000 head of cattle pass through Aronui each year and, with the help of the computer manager Dougald Cameron and his staff can estimate what mix each animal should be fed for optimum growth.

Ralph Shannon (seated) and Peter Robertson.

The system keeps track of such information as the number of livestock in the pens, the types of feed available and the cost of feed. It determines what level of intake of certain types of feed each animal requires and what they should be eating progressively. It also keeps all accounting records such as what the animal fetches when sold and how much feed went into producing it.

Previously all records and analysis were kept and made by hand – ie pen and paper. Not surprisingly, the new system has been enthusiastically received, thanks to the time it saves and the accuracy it provides.

Weight gain and feed mix are both items of interest to Ken Coombes, manager of the Stanbroke Pastoral Company at St Lawrence. But as the largest cattle company in Australia, with more than 270,000 head, Stanbroke is more concerned about its Brahmin bull stud where it breeds pure Brahmin cattle for use as herd bulls.

Shannon Robertson installed a system just over 18 months ago. The system, based at the Waverly Station, enables Coombes and his staff to make decisions regarding which to breed and which to cull, etc.

It numbers each animal and records it, using 14 criteria such as sex, weight, date of birth, sire, dam, etc. It gives a compete breeding resumé of every stud animal and records past and present performances of each sire and dam. It provides several different reports from which decisions can be made.

According to Coombes, the system enables him and his staff to make instant decisions, whereas in the past success depended largely on his powers of recall. Now decisions can be made based on much more accurate information.

The system has also saved time and ended the need to muster twice.

Harry Stevens has problems of a different nature.

As Queensland's largest potato grower he has a massive 10,000 tons of that vegetable to grow, harvest, transport and market each year. His financial turnover is large.

Stevens had a computer system installed 3 years ago. He describes his accounting system before that as "haphazard at best".

The main advantage of the system, he says is that it enables him to predict future market trends and make his managerial and financial decisions accordingly. It gives him the security of knowing his exact financial situation at any given time.

He says that he couldn't conceive of his business without it and cannot understand why many of his competitors and neighbors have yet to computerize their farms.

This is a situation that Shannon and Robertson plan to redress, although now they are trying to encourage clients to travel to them, offering incentives of reduced rates to do so.

"We used to be prepared to rush off all over the country," says Ralph Shannon, "but now our workload is so great that the long-distance travelling has had to be cut back."

However, the pair are planning a mammoth computer coast to coast trip for August which will also double as something of a unique promotion.

It will involve a check of selected Shannon Robertson sites, beginning with the Bombay Rock Nightclub at Surfers Paradise and ending at the remote Innesvale Station in the Northern Territory, part of whose country fronts onto the Indian Ocean.

Pamela Robson is a freelance journalist based in Queensland.

YOU'LL APPRECIATE YOUR FIRST BROADBAND NETWORK WHEN YOU DON'T HAVE TO INSTALL YOUR SECOND

It may come as a surprise that many of the local area networks currently available can quickly be outgrown.

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Why Blame The PC Shop?

David Reading, a director of Parity, responds to Trevor Housley's critical report on computer retailers. Parity is one of Australia's largest personal computer dealers (IBM, Eagle).

Personal computing is a sophisticated business. There are thousands of products to select from – matching a special customer requirement with the best combination of hardware and software takes time and expertize.

As an experienced computer consultant, Trevor Housley, more than anyone, should know this. His criticisms of computer stores were unreasonable (Today's Computers, June) and his approach naive.

A computer retailer has a full-time job just keeping up with what's available, without also attempting to be a technical specialist.

Most purchasers of personal computers have requirements that can be readily met by one or more of the many excellent standard software packages now available. Usually, the type of equipment they need is also easily resolved. Most computer retail salesmen can sell you what you need. It's an efficient and straightforward business transaction.

But if you want more than that – a system tailored to meet specific business requirements, as Trevor Housley wanted – then it is unreasonable to expect the retailer to be able to help you. Before you go to a store, chances are you need some sound consultancy advice.

Trevor Housley also made another mistake.

He started out the right way by identifying what he needed; a business solution. He then decided on an IBM XT Personal Computer – another good move. Then he got it wrong. He let his technical interests override his business sense and became frustrated when the computer retailers he talked to couldn't help him.

David Reading

A computer retail outlet is geared to help customers with well-understood needs and who want to use a computer as a straightforward application tool. The computer store is *not* a computer company.

It is important to understand there are 3 types of computer stores, which are categorized by the market they serve.

(1) **The Hobbyist**: The original style of computer store. This is typified by Dick Smith and Tandy. People who shop there typically know what they want and buy their computer systems component by component.

(2) **Home Computers:** This is currently typified by traditional retailers selling computers such as Commodore VIC and Atari primarily for entertainment and computer awareness. It will become the biggest computer market of all when home computers can communicate to central computer services. But that day is still 2 or 3 years away, when home computers will dominate the computer market.

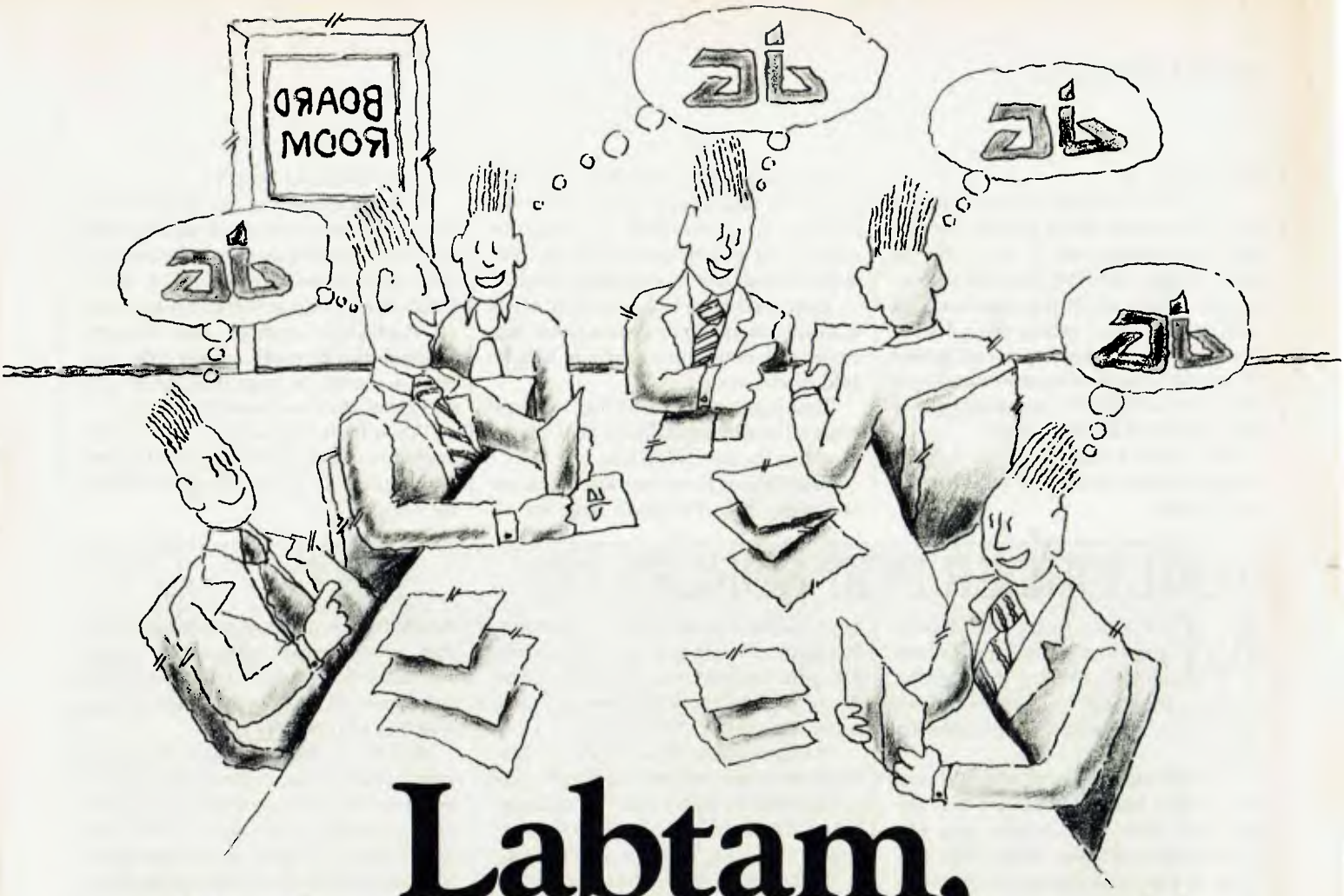
(3) **Business systems:** following the launch of the IBM-PC in 1982, personal computers for business have experienced incredible growth; the market is approximately doubling in size each year.

Because the business PC market is such a key area, it will be interesting to analyze what the business system retailer has to cope with.

Consider how many computer systems there are in Australia: more than 30 of the IBM style, and more than 50 others. Obviously, no store can afford to handle more than 2 or 3. With each personal computer there's a choice of several thousand hardware and software options. It would be a very remarkable store that would be able to keep its staff informed of all the various system capabilities, configurations and idiosyncracies. It's a costly, time-consuming task to keep up-to-date with only a few.

People often equate buying a computer with buying a car. When they buy the latest model Holden or Ford, they tell the salesman what options they want, then pick it up equipped as specified, and drive it away. Why, they ask, can't it be the same with a fully optioned personal computer?

Continued on page 54



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For example, a division of the **Pratt** group, via their recently awarded M.I.C. licence, has acquired an equity in Labtam. **They know success!** Also, negotiations are concluding with China for business in excess of A$30 million.

If you are thinking of computers shouldn't you be like a lot of other successful businesses and think Labtam, the computer company on everyone's mind.

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From page 52

The reason is that no-one actually buys a computer. What people buy is a computer system and it can come in more shapes and sizes than all the car models of the world put together. The really astute buyer selects the software first, then has the hardware configured to operate it. Depending on a buyer's system needs, an IBM-PC can be configured in hundreds of different ways.

So there is a need for a new style of computer store to meet the varied needs of business.

The new breed of business system suppliers must have major financial backing to ensure that the business user's total requirements can be met, whether complex or straightforward.

They must have technical specialists who are constantly evaluating new products and determining which will be sold by the store.

Training and consulting services must be readily available to back up the products the store is selling.

Establishing these new kind of stores is a major task; it requires large investments in time and money.

Parity has spent the last 18 months in planning and has invested more than $2 million to launch its new business systems store in each State capital. Since Parity has already achieved the position of Australia's number one IBM-PC dealership, currently selling 200 systems a month to large companies, the success of the new stores is assured.

When Parity opens its new stores in September, people like Trevor Housley will know who to go to for the answers they want.

MAIL ORDER PCs? FORGET IT!

Mail order firms and department stores are "not the best places" to buy a computer system, according to the Australian Computer Retailers' Association (ACRA).

A recent statement by ACRA claims its members have often helped the "unfortunate buyer" who bought from one of the above and then found that systems do not work together properly or they are unable to obtain vendor support.

ACRA says it spends more time on ethics than any other matter because ethics, that is professionalism, is the main difference between a specialist computer retailer and the retailer who just sells computers as an ordinary product. Retailers know that buying a computer is not just "child's play".

"Unfortunately, some suppliers have implied in their advertising that buying a computer is just a case of choosing brand X and walking out the door, plugging in, and using *Wordstar* or *VisiCalc*."

ACRA says that unless buyers are given correct advice, they will buy systems and software that are not suitable for their needs. Most ACRA members sell the popular brands of computers, peripherals and software.

The ACRA code of ethics states that members will promote goods to sell on their merits, which means that members' advertising will be correct and that members will give honest advice in the selection of products.

ACRA members are required to ensure that all equipment they supply is in working order. They should set up and test equipment to ensure that it is working efficiently. They should advise their customers to buy the whole system from one source so that only one supplier is responsible for it all working properly, and no-one can pass the buck.

Computer retailers may have a lot to learn, but there is much that they can teach, says ACRA.

PC RETAILERS OFFENDED

Sir: The article in your June issue and especially the headline of "Computer Shops Won't Help You" was grossly misleading. Your associated advertising on radio and in the press was unfair, offensive and damaging.

The author of the article claims to be a computer professional with over 20 years' experience and a small portion of his report deals with his visiting some computer showrooms and an exhibition at a school and says that only one of the people he interviewed knew the answers to his highly technical questions. At no time was it suggested that he was being misled or wrongly advised (in fact he is complimentary about one of the "earnest young men" he encounters and states his delight with his new system), yet this article was advertised as "horrifying", computer shops were labelled "hopeless" and salesmen were not to be "trusted".

The computer retail industry is young, but if it had not been for its pioneering contribution, personal computers would not be where they are now. Then there would not be a need for new magazines to try and break into the market by using sensational, albeit unsubstantiated headlines and advertising.

Computer shops in particular assist a wide range of users and potential users. The industry has an active association with a firm code of ethics and strong policies on pre-sale consultations, selling, after-sale support and copyright. We are prepared to respond to and profit from objective criticism, but your reporting on a computer expert knowing more than some salesmen was not objective and your headlines and advertising had little relationship to the contents of the article.

We realise that it is fashionable to attack computer retailers in the popular press, but we are astounded to be attacked unfairly by the newest computer magazine. When you become more familiar with the microcomputer industry and its problems you will see that computer shops are not doing such a bad job and that they deserve a bit of understanding and fairness.

You and our prospective clients are welcome to inspect our lists of existing clients. Ask them if they were satisfied with the advice they were given and the support which is theirs for the asking.

Steven Colman
Vice President
Australian Computer Retailer's Association

The 16 bit IBM Compatible for near half the price!

More computer for nearly half the price!

If you're really serious about computing, you're probably looking at the IBM PC. It's a superb computer – but look at the price; way over $5,000 for a usable system, then you start buying the programs! Now there's a brilliant, compatible alternative: the Dick Smith Challenger. For near half the price of an IBM PC, it gives you much more computer. With Challenger you get 128K bytes of RAM memory, for example – not just 64K. And on the expanded machine you also get both Centronics and RS-232C Serial Ports as standard (IBM charges you extra for both).

An IBM PC expanded to this level would cost you **over $5,300***, yet the expanded Challenger costs only **$2990.**

Is it really IBM compatible?

Compatibility is a tricky business: some software made for the IBM PC won't even work on certain configurations of the PC itself. A few odd programs rely specifically on minor internal details of the IBM PC which cannot be duplicated legally on other machines.

The Challenger is about as compatible with the IBM as you can get. This means it can run just about all of the huge ange of software written for the PC – just pop in the disk, load and go!

Plus software worth over $800 – FREE!!!

That's right – with the Challenger Expansion Unit, we give you a set of software and manuals worth over EIGHT HUNDRED DOLLARS, absolutely FREE! With the IBM PC, it's all optional at extra cost! It's all the software you're likely to need for most home and office computing: MICROSOFT MS-DOS,GW DISK, BASIC, PERFECT WRITER/SPELLER, PERFECT FILER & PERFECT CALC.

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Challenger is the registered trademark of Dick Smith Electronics.

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Dick Smith Electronics

COMPUTER CITY

in 46 Dick Smith Electronics stores throughout Australasia

The Boss Must Set An Example

Lack of education, hi-tech ignorance, has slowed the growth of the PC market – but when the boss is PC-literate, the staff learns fast.

"An initial wave of acceptance of personal and small computers for non-computer people has subsided. Lack of education is now holding further major growth back."

These are the comments of one of the industry's top-selling sales persons, Felicity St John, who sells some half a million dollars a year's worth of personal computers to a wide range of clients.

Felicity, a keen skier, surfer and tennis player, works a 50-hour week with City Personal Computers in downtown Sydney. She mostly carries out training and education of new users herself, following sales, but often recommends new users to training specialists, such as the Richard Anderson Metropolitan Business College (MBC) operation in Sydney.

Must do more

"Manufacturers and distributors simply must do more to educate business executives into getting personally involved, or the industry growth could well taper off," Felicity suggests.

Most of her sales are Apple or IBM machines, but Felicity says the Apple Mac and Lisa units are by far the easiest for users to get to know. She's enthusiastic about the Apple mouse directional device, and keeps a Mac at her home, a Bondi terrace house which she is slowly renovating.

"New 32-bit technology and the new integrated software packages coming along, like Imagineering's Symphony, should make a lot of difference, but more education and training is badly needed," she says.

Options emerge

A growing number of training options are emerging for users. In Sydney, MBC competes with the likes of the large and innovative Management Technology Education (MTE) group, managed by Gregory Schmidt. There's a PC Learning Centre at Chatswood. And, of course, most of the Big Eight accounting firms have plunged into education courses for businessmen.

Free courses

The Computer Shop, in Annandale, Sydney, is offering free introductory courses on the IBM-PC and other machines. Micro Workshop offers a total of 14 different courses, Software Source is concentrating on Spellbinder software and other new releases and Worldwide Electronics covers areas such as dBase II and Wordstar.

Software Source is aggressively increasing the variety of its courses. MTE's energetic Schmidt says that some 500-600 executives take his courses every month.

"There should be a well-planned strategy by the major software distributors and the big manufacturers to get in there and really help new users," City Personal Computer's St John urges.

This company has 2 retail outlets, one in downtown Sydney and one at North Sydney, run by former Kodak Australia and Burroughs UK heavy, Peter Hatcher.

MTE's Schmidt notes that his company has emphasised user-friendly training offices, with extras such as courtesy phones for busy executives who would wish to contact their headquarters while training. "We are interested in helping executives in big companies who might want a dozen or 20 managers in groups introduced to small computers," he explains.

On-site training

Schmidt also notes that MTE can offer on-site training for executives unable to leave their offices. Recently he has introduced on-site help for chief executives of major corporations.

"If the chief of an organisation becomes proficient with desk-top computers, then middle and lower level managers will have to be on their toes," Schmidt forecasts.

MBC's Anderson says a lot less technical jargon needs to be used before further major growth occurs. He urges executives to take "refresher" courses when they get out of touch.

Constant use of various packages, he says, is the answer to keeping in touch with key upgrades to software.

School Software Market Takes Off

Spelling and speed reading, library software systems – for use in PCs – are growing fast. And when teacher is stumped, kids with PCs are ready to take over.

Five years ago Tillie Eaken remembers talking with friends one night and deciding there and then that there had to be a market for software.

The problem was that schools then didn't have computers.

But now they do. And Lothlorien sales have taken off like a rocket during the last 18 months.

Eaken also has five administrative packages for schools comprising two library systems (for large and small needs), The Library Catalogue, and archive-bibliography-filing program and a school records and reports package.

Another tutor package, Spelling and Speed Reading is particularly popular.

Growth in total sales has been exponential during the last 18 months with 25% of these attributable to home products and school purchases accounting for a rising number.

"Library computers free librarians to do librarianship," says Eaken.

"The computer does the paperwork – the cards and the overdue notices, leaving the librarian free to help people get the information that they need."

Schools like the library software.

They can do things like create reading lists on any subject and for any purpose, in minutes or find if a particular book is in or out.

Another benefit of a student access system in a library is that students are trained early in information retrieval.

Lothlorien library software is available in two versions; the larger Sydney College of the Arts version (SCAMPS) which uses a 20 MB hard disc and a bar code reader and the smaller version, the Integrated Microcomputer library system.

The smaller system is suitable for school libraries, says Eaken.

The Lothlorien Small Library system on the Apple II has a market niche: "It's for people who need the management but who can't afford the mainframe prices," says Eaken.

She finds that her small library system sells mainly to schools with lively parent bodies who often fund the purchase.

On the Apple II, a single station system costs $12,000 taking in both hardware and software. A larger multistation system with public access terminals and a circulation desk can go to $65,000.

An acquisitions module is being developed which will give periodicals and journals documentation.

Eaken says "school attitudes to computing are changing. Computers were originally the territory of the maths and sciences departments. Now, computers are moving into the humanities departments and even infants teachers are now a growing force in the demand for educational computing."

This makes Eaken's job easier. Not only are the teachers aware but often children can teach the teachers.

"I took an Apple into a classroom. The teacher said 'I don't know anything about it. I don't even know how to start it.' But four or five children who had computers at home knew how and showed the teacher."

The Integrated Microcomputer Library System
Lothlorien Software
GPO Box 1033
Sydney 2001
(02) 398 4023
Designed for schools and academic libraries, the Lothlorien system gives the librarian the ability to create and clear loans within seconds. A bar wand is an option to keyboard entry. Librarians can know within seconds which books a borrower has on loan, if the borrower has reached the limit or has sanctions against them. In this case, loans are blocked unless freed by password. Librarians can also know whether a book is out, and with who, and when it is due. Librarians can search for topics by key word or Dewey number. They may place reserves on loaned material including global reserves for multiple copies. They may produce overdue notice automatically, individually addressed, and listing all overdue items. Daily cumulated loan statistics, and sorted lists of overdues by borrower or call number are further features. Requirements: Basic system: Apple II 48K, or Apple IIe 11MB, disc drive, dot matrix printer, Data bar, bar wand reader. Skill: Novice. Price: $4,000-$6,000 depending on configuration.

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PC Wars Erupt Over NZ Campus

Universities are a leading edge market. The executives of tomorrow are at university today. IBM, Apple, Data General, Wang, et al, know that if they win the minds of students, they might get their business later.

In early June a DC-8 chartered from Air New Zealand touched down at Auckland Airport carrying a cargo of Apple's new Macintosh and latest Lisa computers for New Zealand universities. The plane-load of Californian and Irish-made machines marked a breakthrough by Apple's distributors. They were the first consignment of an NZ $1.5 million bulk purchase by the universities to be delivered over the next 18 months.

According to Dr John White, director of the computer centre at Auckland University: "The machines represent an opportunity that hasn't existed for university departments with small budgets before." He explains that the new range of 32-bit machines are particularly useful for mixed-language documents, a prime need for students.

"That applies to students trying to sit exams in Greek, and those who are trying to get out publications in mathematical language." At relatively low cost, White says, the new Apples provide a wide range of applications.

Apple's success in the important university market, where all suppliers are offering a variety of heavily discounted deals, is just the latest hit in what amounts to a sales war. It's one that extends to New Zealand's 430-odd secondary schools, and even to its primary schools.

"It's a leading edge market," says an IBM spokesman. "The executives of tomorrow go through the universities. That's why there are a lot of manufacturers in it."

To crack this increasingly lucrative market IBM, Apple, Data-General, Wang and others have simply moved ahead of Government policy and made sales wherever and whenever they could.

IBM, for example, has sold a lot of its PCs to New Zealand's 7 universities by the device of converting the universities into "dealers". As part of its "major thrust" into the education market, announced earlier this year, IBM is also pushing its PC's, priced at around NZ $2,000, into schools through dealer-incentive schemes and computer training programs for school staff.

Data-General, which won a 1982 $3.2 million tender to supply the technical institutes with mainly mini computers has followed that up by gifting NZ $1 million worth of software to the institutes (though they don't yet have the machines to make the software work). Data-General's Auckland manager, Don Beck, agrees the original sales were "on a heavily discounted basis."

And Wang, for whom a major rival is DEC, has concluded a NZ $2 million contract to supply Auckland and nearby Waikato universities with data and word processing equipment. Says sales secretary Debbie Lofley: "We're doing as well as anybody else, if not better."

Of the universities, technical institutes, secondary schools and primary schools, it's the universities that are attracting most attention from dealers. Dr White says the discounts come "in a number of different guises". Since the New Zealand Government doesn't provide the same tax incentives for hardware donations as apply in American universities, funding has proved difficult.

It's only every 5 years that the universities are allocated their budgets, an arrangement, points out White, that is hardly designed for the computer age. The leapfrogging technology means, he says, "that buying preferences change at least once a year." A decision may rapidly be invalidated by the latest release – "twice as good at half the price."

The urgent need at universities at present is keyboards. Most of the computer-buying budget is being stretched to purchase hardware for students to work on. Sometimes the mainframes aren't big enough for the job. Data-General's equipment for example simply fell down when students tried to stretch its application beyond capability. Response time slowed down so much that the hardware's usefulness declined. (Data-General had warned of the equipment's limits but faculties simply kept on adding on terminals.)

At the universities, however, there's been a lot of ingenuity. Though theoretically some of the equipment has been extended far beyond its potential, students have contrived novel solutions. "The engineers can make anything work," marvels White.

Though a piecemeal approach, necessarily so because of the ad hoc budgeting, has worked reasonably well

within the universities, the secondary schools looks a highly fragmented market, largely in the absence of an understandable Government policy. The National Government, estimating that NZ $29 million would be necessary to supply the secondary schools with adequate hardware, decided it couldn't afford the cost. (Labour opposition education spokesman, Russell Marshall, has promised to "top up" the schools' existing equipment with about NZ $5 million.)

The Government's original estimate was made in 1982. Since then the schools have gone their own way, buying according to personal choice. Here, too, Apple seems to be dominating the market. By October 1983, for instance, an Education Department survey found that, of the 315 schools which responded, most had bought the small Apples. There were 881 Apples, 121 BBCs, 79 Polys (a New Zealand-made machine) and 53 Japanese BMCs. All of the above were "officially approved" under a 1982 department directive.

But the non-approved machines are doing well too, illustrating the market's independence. Tandy/Radio Shack's TRS80s were represented by over 200 units, and Commodore by over 140 Pets. Clearly the proliferation of models has wrecked the department's declared policy of standardising secondary school

Auckland University history department

equipment – "one make, one model, one operating system."

Penetration of the secondary schools market is reckoned at around 96%, much of it achieved with cut-price deals. But the target of around 20 computers per school obviously leaves potential for a lot of unit sales yet. However, though the Apple 111e is the schools' market-leader, it's unlikely that the university's bulk, cut-price purchase of Macs will be extended to the schools. According to Mike Lord, general manager of Apple agents CED distributors: "I canot see a place for the Mac in the schools. They rely on public domain software."

In the secondary schools the situation is complicated by the Government's apparent determination to push the local product, the Poly. Developed through a NZ $260,000 grant from the Education Department and NZ $1 million funding by the Government's Development Finance Corporation, the Poly has faced intense competition from the big manufacturers. At this stage, the schools' independent buying policy seems to give it a limited future.

In the primary schools the market is moving ahead with the same cavalier disregard for Government guidelines. Though the Education Department officially disapproves – or at least doesn't "encourage" – computers in the primary (and intermediate) schools, they are turning up there anyway. At the end of last year, for instance, school inspectors estimated that in the Auckland area computers has arrived in 1 out of every 13 primary or intermediate schools. By 1986, they believe the penetration will have soared to one in 3.

Dealers cite New Zealanders' "machine-compatibility" as one reason for the rapid growth. Whatever the reason, the education market is a hot one.

Selwyn Parker is an Auckland-based freelance journalist.

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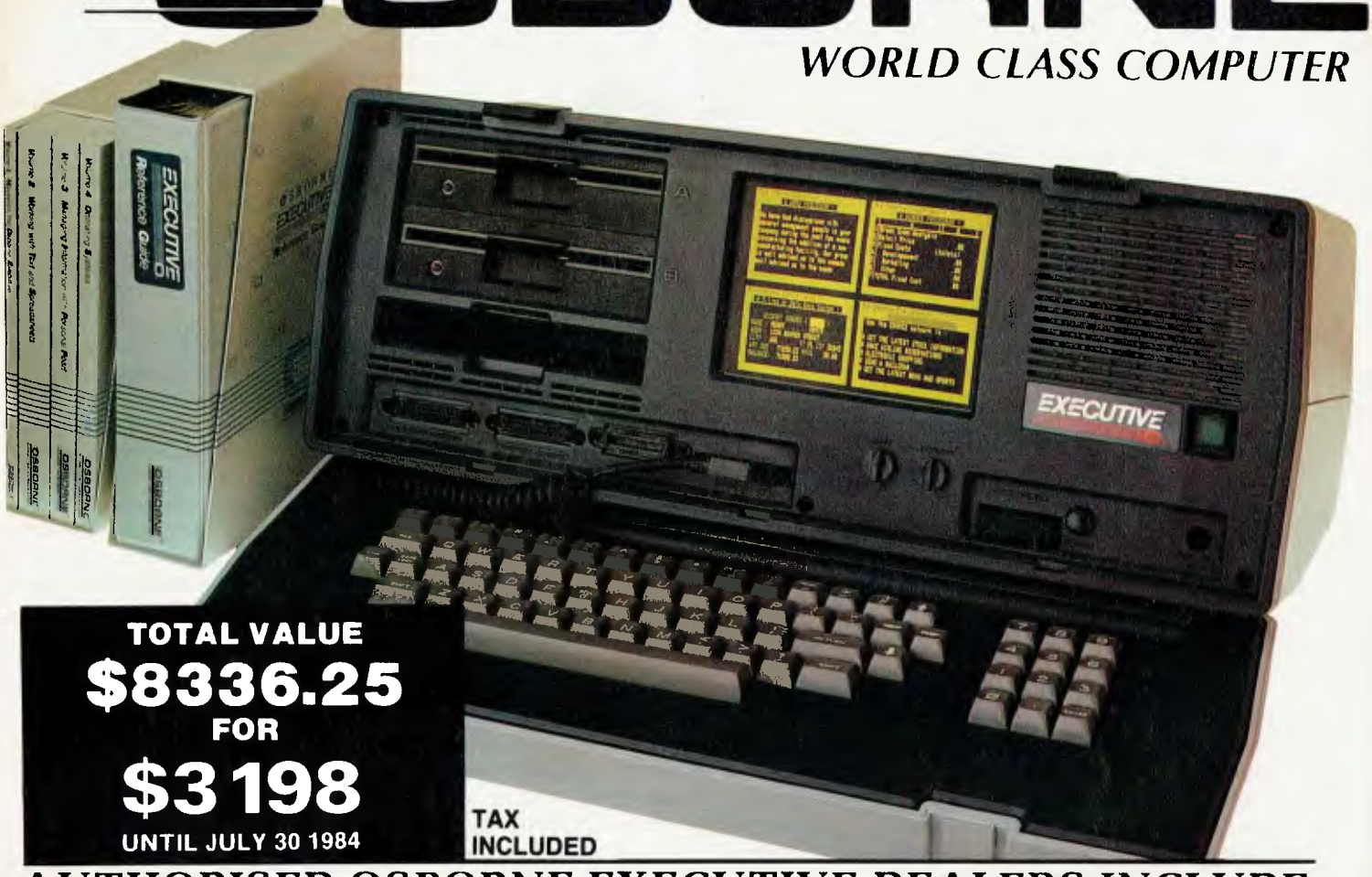

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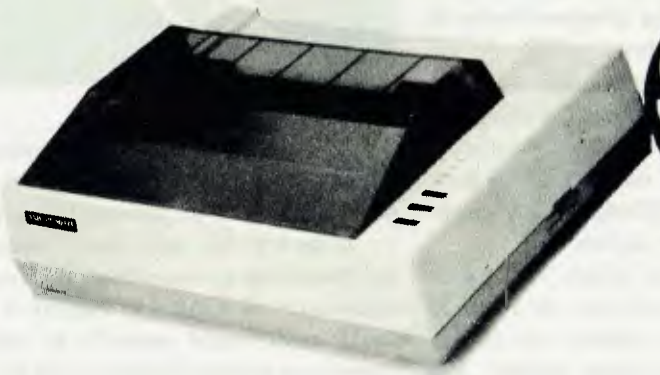

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Surviving the Coming Shakeout

Computer book publishing is facing uncertain times as the proliferation of titles outpaces the demand. Only a special breed of books is likely to survive the competition.

The top ten computer book publishers have announced plans to release 1,500 new titles during 1984, almost twice the number they published the previous year. In addition, the trade houses are said to be planning 1,500 more. Can the market absorb this title output?

We'll soon know, since this outpouring of books is beginning to appear on the market. The spring and fall seasons of this year could go down in publishing history as comprising the start of the Great R.O.I. (return on investment), or—less happily—as the signal for the Great Shakeout.

Some indications are not positive. In fact, many publishers are facing the possibility of returns of computer books in unprecedented numbers.

There will be big winners—and big losers—in computer book publishing, depending on the strategies publishers adopt in response to these market forces. I think that a winning publishing strategy should emphasize five key factors.

The first is value added. The market has no place for books that are rehashed technical manuals cluttered with incomprehensible jargon, poor writing, and mediocre graphics. Authors should enhance their subject matter with a depth and expertise unavailable elsewhere. They should be chosen for the readability of their style, and their work should be given an appealing graphic presentation if it is to succeed in today's cluttered book store environment: Both interior text and jacket design must be strong enough to capture the reader's eye and imagination.

Nahum Stiskin

The second key factor in a winning strategy is niche. The computer marketplace ranges from the low-end home sector to the high-end multi-user/multitasking networking environment. Some publishers strive to address all markets at all levels; most would probably do better focusing on limited segments of the hardware and software markets.

The third element of a winning strategy is a publisher's ability to ride the wave of the future. Good books on the forefront of technological change will have the longest shelf life; their sales will grow together with the user base of a given computer or software program. In addition, to ensure the timely release of quality books in this rapidly changing market, publishers must put to use those computer applications that improve the competitiveness of their products: computerized typesetting, digitized graphics, electronic word processing, and laser printing.

A fourth key to success in computer book publishing is an emphasis on marketing, including innovative advertising and promotional efforts carried over from traditional trade publishing practice. Well-focused, high-profile print advertising campaigns and, wherever possible, national author media tours, must be buttressed by effective in-store merchandising if a given title is to rise above the proverbial "noise" that besets the entire computer marketplace.

Finally, unlike general trade publishing where most product is sold by title, computer book sales will be influenced more and more by the credibility of the publisher's imprint. Hence, a publisher's reputation for maintaining high standards will prove indespensable to a winning strategy. In the end, it is quality that will prevail and endure. ■

Nahum Stiskin is the publisher and general manager of Microsoft Press.

A word on the care and maintenance of your micro computer...

Rexel

Computer and Disk Drive Manufacturers recognise the fact that critical components need regular care and maintenance. The Wilson Jones programme, new from Rexel, will halt and disperse the destructive build-up of dust, static and other contaminants that can severely shorten your Micro Computer's life. Regular use of Wilson Jones Computer Care Products can significantly improve performance and eliminate costly down time and data loss caused by neglect.
Without proper care and maintenance your system could be heading for the garbage bin. That's no way to treat your investment, is it?

- **Wilson Jones Head Cleaning Kits** for 5¼" and 8" Disk Drives. Includes 10 pre-saturated disks and reusable jacket.
- **Wilson Jones VDU Cleaning Kit** cleans without abrasion, neutralises static.
- **Wilson Jones Anti-Static Kit** protects delicate micro-circuitry by discharging static from carpet, metal and plastic around the terminal.
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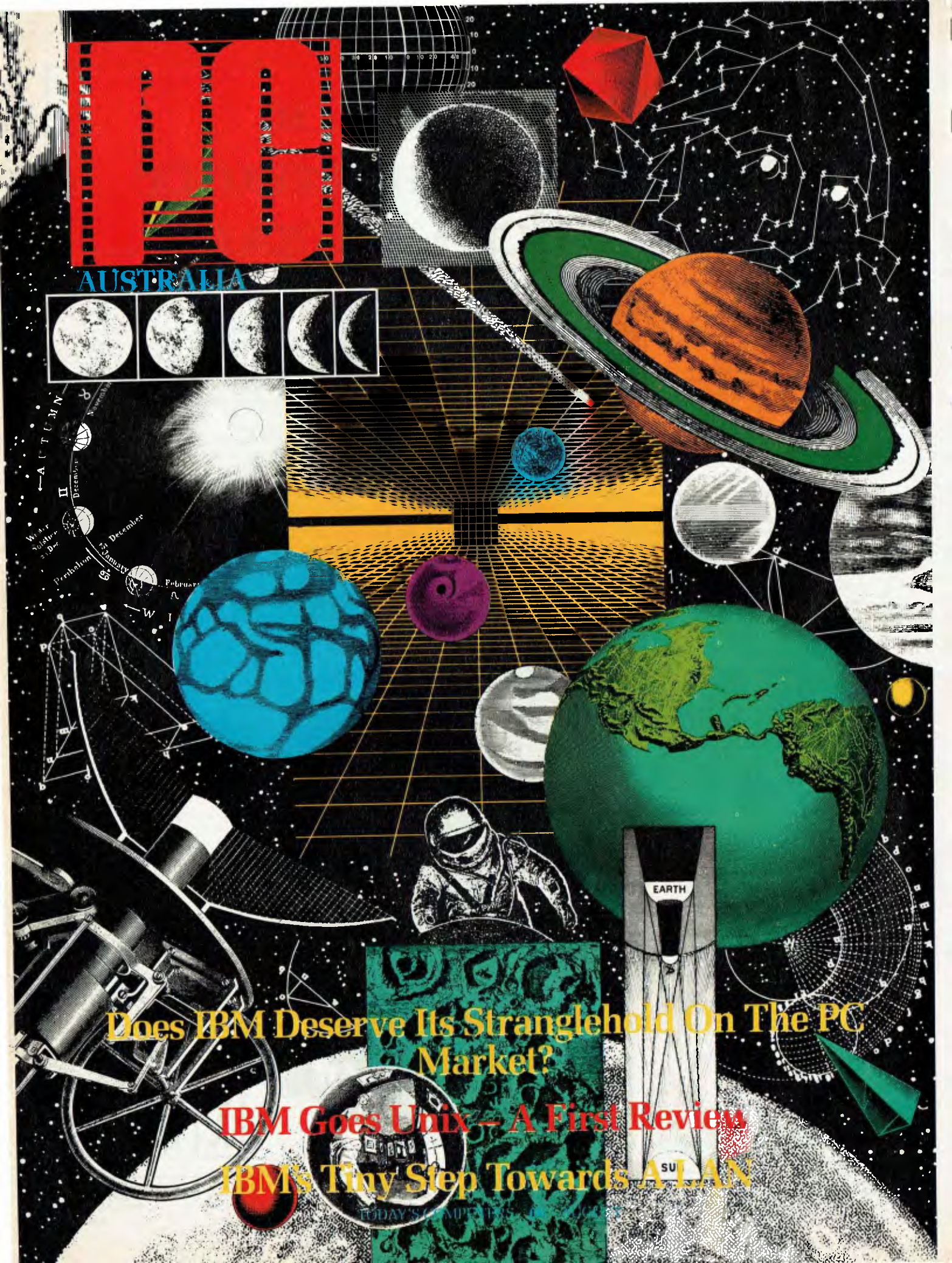

Does IBM Deserve Its Stranglehold On The PC Market?

IBM Goes Unix — A First Review

IBM's Tiny Step Towards A LAN

IBM Plots For LAN Supremacy

IBM is yet to reveal all of its plans for its local area network, but it clearly intends its LAN to become the industry standard.

IBM, by far the world's largest computer company, is very communications oriented and protocols developed by IBM have become virtually industry standards, says The Yankee Group of researchers. In fact, most things developed by IBM have become industry standards. Therefore, although IBM has not yet announced its Local Area Network (LAN), its plans cannot be safely ignored by anyone buying into this area.

The communications standard used by IBM's large computers, SNA ("Systems Network Architecture"), is now a standard communications protocol, says Graeme Philipson, senior researcher for The Yankee Group. SNA allows file transfer between different types of machines. It is not in itself a product, but a set of rules which allow various devices to communicate. IBM is totally committed to SNA as a future communications standard, and virtually all other major computer manufacturers have followed suit.

Besides larger systems supporting SNA and the various other earlier IBM protocols, IBM has a few smaller networking type products. Recently IBM also announced a low-end baseband "PC Cluster" LAN, a CSMA/CD (Carrier-Sense Multiple Access/Collision Detection) bus LAN using twisted pair cabling.

The PC Cluster was designed to meet the short-term competition from the many low-cost independent LAN suppliers, but is not powerful enough to be a contender in large LAN sites.

But the world is waiting for IBM's real LAN, now not expected until 1986. The Yankee Group says IBM has gone to Texas Instruments for its LAN chip and, conservative company that it is, IBM is waiting to make sure that Texas Instruments can deliver the goods. IBM is well aware of problems that Intel is having making Xerox's Ethernet chip.

IBM has adopted a very clever strategy and has already announced some details of its LAN.

There are still a lot of unresolved problems with IBM's LAN, but much is known of the final form it will take. IBM has adopted a very clever strategy, and has already announced some details of its LAN. The exact wording of IBM's LAN "statement of direction" is:

"IBM has announced the IBM Cabling System, a common cabling system that can be used as an alternative to coaxial, twinaxial, twisted pair, and other special purpose cabling.

"IBM intends to implement a star-wired, token-ring local area network using the IBM Cabling System within the next two to three years.

"This token-ring local area network is consistent with IBM's contribution to the local area network standards committee of the Institute of Electrical and Electronics Engineers (IEEE) and the European Computer Manufacturing Association (EMCA)."

Unlike a passive network technology, IBM's planned token ring network must be able to dynamically reconfigure itself when a node comes off or on the network, whether this happens intentionally or accidentally. The ability to do this requires considerable intelligence at the node and sophisticated reporting techniques to the network monitor or control centre.

According to IBM announcements and Yankee Group expectations, IBM will use the following techniques for its LAN products:

Topology

IBM will implement small departmental LANs in a star/ring topology. It feels that this is the most resilient topology in terms of the ability to isolate faults and route data around those faults.

Access method

IBM will use token passing because of its appropriateness for synchronous SNA communications and real-time voice transmission. Token passing rings have a central controller which tells each device when it may use the network.

"Tokens," or empty frames capable of storing data, are circulated around the network. When a device wants to trans-

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mit, it claims whatever token is passing and lodges its data in it. The token continues its journey around the ring, depositing its information in the device it has been addressed to, and picking up an acknowledgement that the data was successfully received. This is then deposited back with the sender and the token is freed to repeat the same task elsewhere in the system.

Media

In May, IBM in the US announced the cabling its LAN will use. The release of this information lets potential users who are wiring buildings now to use the right (for IBM) cabling. It will also have the handy side-effect of leaving some other systems with different cabling out on a limb – WangNet, for example. IBM intends its system to become the industry standard, and The Yankee Group believes this will be the case.

IBM has given customers a very good reason to lay its cable instead of a voice-only line.

The "Type 2" cable, as announced in the US, consists of 2 data grade twisted pairs in a shield surrounded by 4 voice grade twisted pairs surrounded by a second outer shield. With the large turnover in PABXs that will occur in the next few years, IBM has given customers and potential customers a very good reason to lay its cable instead of a voice-only line. The cable has been extensively and successfully tested on a variety of PABXs.

IBM will also support a dual-strand fibre optic cable for factory or campus sites.

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IBM Goes UNIX

In a bid to steal AT&T's thunder, IBM has announced its own version of UNIX – PC/IX. This special report on UNIX includes first-hand looks at IBM's product and three other UNIX-like operating systems.

AT&T has entered the computer marketplace and everyone expects a war between the big guys, IBM and AT&T. So who would have expected that IBM would market an AT&T product? When the product is the venerable UNIX operating system from AT&T, though, it's not too surprising.

At the UniForum '84 convention for UNIX buffs last January in Washington, D.C., IBM formally announced the Personal Computer Interactive Executive (PC/IX), a single-user version of UNIX System III for the PC-XT. The transfer of UNIX to the PC was done by Interactive Systems Corporation. IBM's marketing efforts for PC/IX are being directed from the company's National Accounts and National Marketing divisions.

PC/IX should be available by the time you read this review. It will cost $900 and require an XT or an equivalently equipped PC. Its enhancements of UNIX III include functions to read/write PC-DOS disks, a full-screen editor, and support for PC-compatible peripheral devices.

As I write this, IBM has not yet released PC/IX, so it refused to provide a review copy. In order to try PC/IX, I had to fly to the IBM office in Dallas to attend a PC/IX review session.

Upon arriving, I was told that the session was not until the following week and that none of the equipment was set up. After some negotiating with an IBM representative, I was able to obtain the use of an XT and a copy of PC/IX.

Normally, when I review a piece of software, I run it three times. First, I install it according to the manual, try it out, and get a feel for how it works. I make sure all of the advertised features are there and mull this over for a while. Then I reinstall the program and crash-test it (try to make it malfunction). Finally, a few days later, I do performance and ease-of-use checks.

This review process generally takes 30 hours over the course of several weeks. It is performed on my own system, with all of my test programs, hardware (letter quality and dot matrix printers, color and monochrome displays, modems, different floppy sizes, and so on). For PC/IX, I had just 2 days in a foreign environment with incomplete documentation, no library, and nothing but a PC-XT, an IBM graphics printer, and a monchrome display.

Consequently, this review is limited to

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In Australia, only Telecom can lay cable which is to be used for voice traffic, so IBM Australia will announce and encourage the use of only "Type 1" cable. Type 1 cable consists of 2 data grade twisted pairs surrounded by a shield, and IBM Australia will advise users to lay voice cable separately.

The specifications of the cabling are very detailed, describing numbers of winds and thicknesses of coating. Thus suitable cabling must first be "IBM qualified", a procedure which IBM is only just beginning in Australia. IBM itself is not in the cabling business, but there is not yet any known supplier of IBM-qualified Type 1 cable in Australia.

The reason 2 data cables are specified is so that the cable will be suitable for both star and ring topologies. IBM is also supplying a variety of faceplates and physical connecting devices, including "baluns". Baluns are impedance matching devices which allow the connection of coaxial cable to the twisted pair IBM system.

PABX strategy

IBM is co-operating with US PABX manufacturer Rolm on a digital PABX, with gateways to long-haul networks and complete OA voice and data integration in mind. IBM owns 25% of Rolm. IBM is no stranger to PABXs: the IBM 1750 and 3750 exchanges are popular in Europe, especially Britain.

IBM will one day be as dominant a LAN supplier as it now is a PC supplier.

The future

IBM's LAN strategy is in keeping with the company's grand strategy to increasingly integrate and extend its product line and have its products and standards accepted as industry-wide standards.

The Yankee Group believes that the major delays in IBM's LAN will offer great opportunities for third-party LAN suppliers, especially those who can adapt to the new cabling system. Many users who have been holding off to see what IBM will do cannot afford to wait 2 or 3 years.

But remember that while the LAN design and implementation market is potentially very lucrative, it is minor compared to the market for the systems that will be attached to the network. That market is what IBM is really after.

The Yankee Group believes that anybody implementing a LAN before IBM finally releases its own system would do well to ensure as high a degree of compatibility as possible. The best way to do that is to lay IBM qualified cable when details of that become available in the near future. IBM will one day be as dominant a LAN supplier as it now is a PC supplier, and it makes a lot of sense to keep your options open.

my impressions from a very rushed session with a system that was not quite ready for release. Some PC/IX features take more time to set up than I had available. Others were untestable under the circumstances (for example, graphics and communications). I can only report on what I had time to discover and what was documented.

PC/IX as UNIX

PC/IX is certainly a UNIX system. It contains nearly all of the single-user facilities of UNIX System III, without the Berkeley enhancements. The file structure and system calls are standard AT&T UNIX, as is the user documentation.

There are, as far as I could tell, no missing commands except for f77 (FORTRAN), and multi-user specific commands.

I tried perhaps 40 percent of the system's programs and facilities (see sidebar, "PC/IX Features" for a partial list). Everything except the debugger (adb) worked fine. (The debugger documentation was a travesty, which may explain why I could not make it work.) I was not able to try out the communications facilities (both connect and uucp) and the SCCS, tplot, bs, yacc, awk, and snd features.

PC/IX is advertised as requiring 256K of memory, at least one 10-megabyte hard disk (XT or PC expansion type only), and an IBM display adapter. The XT I used had 512K, a recommended lower limit for better performance. Installation requires a double-sided disk drive.

The installation instructions were very detailed. PC/IX can co-exist with PC-DOS on the hard disk (it uses the same partitioning scheme as FDISK) so you may not need to reformat your hard disk. The instructions were a bit murky, but not opaque, with regards to partitioning. Installation took about 20 painless minutes.

It looked to me as if PC/IX will run only on IBM PCs or very similar compatibles. The full-screen editor does its own keystroke decoding and uses the memory-mapped video display. The printer output appears to be interrupt-driven (hence hardware-dependent), and support for non-IBM peripherals (except for the support standard to the UNIX) was nonexistent. There is no termcap file, and thus no support for foreign terminals since PC/IX is a single-user implementation for the PC.

PC/IX comes with an stty command that, like the DOS 2.0 MODE command, alters peripheral setup (switching display adapters or setting baud rates, for example). Also included are the dosread, doswrite, dosdel, and dosdir utitilies for transferring files between DOS and PC/IX.

The screen is controlled by escape sequences equivalent to the ANSI.SYS definitions on DOS 2.0. This lets you control screen colors and positioning using escape sequences.

Support for the IBM keyboard, including the function keys, was completely missing from PC/IX. Also lacking was a provision for a clock with a battery back-up, or any other outside vendor add-on such as higher-resolution graphics, smarter printers, different floppy formats and higher-capacity hard disks.

Also irritating was the occasional lack of type ahead capability, that is, the ability to continue typing while a command is thinking. I'm not sure whether some routines swallowed the type ahead capability, since it seemed to come on sporadically. This may be just a bug that will be corrected by the time the system is released.

Continued on page 73

Hewlett-Packard's new ThinkJet Printer.

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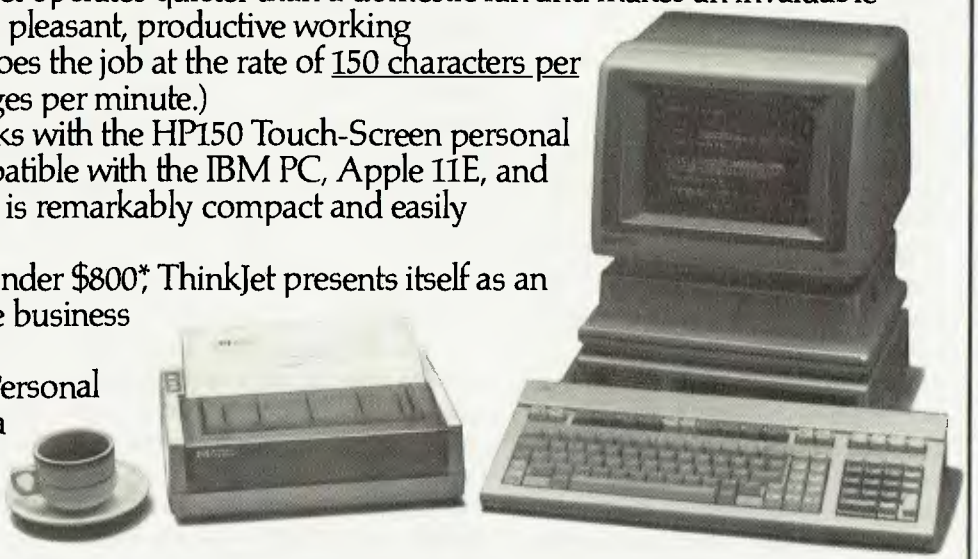

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Like DOS, PC/IX contains a prompted deletion function and a directory lister (similar to the DOS command DIR). The print spooler is called `print` and it seemed to have a bug or two also.

Documentation

IBM claims that it will have new and better documentation available by the time the public release of PC/IX rolls around. I hope so, because the documentation I saw was, in a word, skimpy. It consisted primarily of poorly organized excerpts from standard UNIX documentation.

The C compiler had two pages of documentation, as had one (note that as does not use Intel/PC-DOS mnemonics), and the Source Code Control System (SCCS) seemed to have no documentation at all. The lack of adequate documentation severly handicapped my testing. On-line documentation should be mandatory. Error messages were typical of UNIX: pithy and too short.

Unlike most UNIX implementations, standard documentation on writing and installing device drivers was included in PC/IX. Whether the final version of PC/IX will include this documentation remains to be seen, since it makes it easier to add additional users to what is supposed to be a single-user system. Removing that documentation would negate one of the things that made the PC so popular, namely its ability to interface with non-IBM products.

There was a readable user's guide, with some discussion of utilities (primarily `troff` and `nroff`). An on-line `help` command was supplied with a few files, but not nearly enough. The UNIX on-line manual creation (`man`) feature has no manuals to create in PC/IX, so it is of little use.

IBM's documentation is generally excellent, but PC/IX shows an alarming lack of novice-level documentation. Based on what I saw, I would hesitate to recommend the system for anyone but experienced computer users who have some time on their hands.

> The documentation I saw was, in a word, skimpy. It consisted primarily of not very well organized excerpts from standard UNIX documentation.

Text Processing

Text processing under UNIX falls into two categories: editing and formatting. Editing is the process of creating and altering text. Formatting takes a finished manuscript and makes the output suitable for a specific printer.

PC/IX's sophisticated text formatting includes both `nroff` and `troff`, `nroff` is a text formatter much like SCRIPT (a mainframe formatter) and *WORDIX* (a PC-DOS formatter). It contains the ability to produce tables of contents, footnotes, macro definitions, conditional input from the keyboard, various justification methods, and more.

The `troff` function adds the ability to produce output suitable for a specific typesetting machine, in this case the Graphics Systems CAT phototypesetter. This includes the capability to specify a number of different fonts, character sizes, and spacings.

Preprocessors, such as `eqn` and `ms`, work with `nroff` and `troff` to create scientific papers and manuscripts.

Although `nroff` seemed to work, the implementation did not take full advantage of the IBM graphics printer (not to mention more advanced multiple-font printers available for the PC). And `troff` produces output suitable only for one particular phototypesetter. Similarly, the `nroff` preview function showed only some of the formatting elements on the screen (for example, underlines were indi-

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PC/IX Check List

Here's a quick way to check those commands and facilities that can be found in both UNIX and PC/IX.

- The `nroff` and `troff` text formatters. `eqn`, `neqn`, `tbl`, `ms`, and `mm` manuscript production tools.
- The SCCS source code control system. The `ed`, `sed`, `diff`, and `diff3` text processors.
- The `uucp` file transfer program, (the `uux` networking function seems to be present).
- The `lex`, `yacc`, `m4`, and `awk` language processors.
- A C compiler, `bs` (a version of BASIC), `as` (an 8086 assembler), and `sno` (a version of SNOBOL) on the PC.
- The `spell` spelling checker.
- The `man` utility and the Help command (but little on-line documentation).
- Standard UNIX file commands, with multi-user access control, and multiple accounts. (I suppose so more than one person can use a single XT nonsimultaneously.)
- A full-screen editor, commonly called `INed`, with windows and PC keyboard support.—**M.Z.**

Newsflash: IBM Cuts Prices

IBM has raised the PC's minimum memory to 256K bytes and slashed prices across its entire PC product line by as much as 23% in the US.

The cuts apply to the 3270 PC and the XT/370, as well as the IBM Portable PC, PCjr, PC and PC XT. A typically configured PC with 256K bytes of memory, 360K-byte drive, monochrome display and adapter now costs $US2,520, representing a 23% reduction.

A company spokesman said the boost in memory was needed to accommodate the demand for more sophisticated applications, such as windowing. He added that although the 64K-byte systems will remain in production, the company eventually plans to phase them out.

"The user is now demanding windowing and sophisticated interactive processing that is also user-friendly," the spokesman said. "Software developers that are making these packages need a much larger memory to develop these packages."

The company spokesman said the new PC XT version will be priced at $4,395. The 256K-byte version of the PC will be available for $1,995. The price of the IBM Portable PC will be cut from $2,795 to $2,595. A two floppy-disk drive version of the product will be priced at $3,020.

According to the spokesman, users purchasing a 64K-byte model of the PC and floppy disks that can be upgraded will pay about $200 more than users who buy the new 256K-byte versions.

IBM Australia followed suit smartly on the US price reductions. It dropped prices on its 64K PC model to $3,983 – a cut of 13%.

For the IBM PC XT the new price is $7,768 – a cut of 14%.

It also introduced the 2 new models of the PC and XT, with greater memory – 256K.

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HAVE YOU ADDED SALES TAX AND POSTAGE?

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TC

803/Right/Little

cated but not boldface).

PC/IX's text editor is far more sophisticated than those available on most mainframes and UNIX implementations, yet more primitive than many popular PC-DOS editors.

The INed full-screen editor comes with a keyboard overlay and a number of boilerplate forms. The overlay is an absolute necessity since INed completely redefines the keyboard (in a rather arbitrary fashion). For example, to get most functions to work, you need to hit the "execute" key, the gray plus sign (+). The Ins and Del keys do not insert and delete, while Alt/Ctrl commands are barely mnemonic.

INed does let you run any program while it is working, which is nice for checking results or doing arithmetic. It also has the ability to manipulate two windows (although this takes a great deal of effort). Unfortunately, the documentation occasionally contradicted the program, and block operations neglected to intensify the screen. Cut and paste operations took a little getting used to, and other UNIX implementations seemed superior in this respect.

INed always does line wrap and it does not allow lines over 80 characters long. Scrolling was slow, as was cursor movement. Often the PC would beep for no discernible reason. This is not a quiet office editor.

Finally, INed has six lines of status indicators and markers, including a useless box around the text, so only 19 lines of usable area are left. I would rather have had more text and less extraneous information. At least the on-line help was easy to access and usually helpful.

Don't get me wrong. I would use INed over a number of editors I can name. It makes use of much of the PC keyboard, albeit improperly, to save keystrokes. Further, since the display is direct to memory, screen updating is quick and efficient compared to an external terminal. Finally, INed intelligently uses the PC's extended character set for help messages and status display. I did not have sufficient time to delve into INed completely and I realize that it was clearly unfinished. Interactive Systems, for example, touts INed's ability to work with structured files, but the documentation does not explain what they might be.

Languages

PC/IX comes with a variety of languages. These include a C compiler, an assembler, a near-BASIC interpreter, and a near-SNOBOL interpreter. The only ones I had time to try were the C compiler and the as assembler.

PC/IX's text editor is far more sophisticated than those available on most mainframes and UNIX implementations.

The C compiler is the standard UNIX compiler. It produces either object code or intermediate assembly source code (for processing by as). The documentation was so skimpy that it was tough to get started in C, but after a few false starts it ran smoothly.

To a person accustomed to PC-DOS, the code the compiler produced is surprisingly compact. For example, simple "Hello, World" programs produce object files of less than 1,000 bytes (as opposed to about 10K on PC-DOS). The reason for this terseness seems to be that since UNIX is written in C, most C subroutines are already in memory, so they are called directly. Also, all I/O processing is provided by PC/IX.

Not realizing that PC/IX could transport files from PC-DOS disks, I neglected to carry along my timing programs. So, to get a feeling for optimization, I took a look at the assembly output. The C compiler seemed to produce a straightforward translation of C source to assembler, with no optimization. PC/IX does include the profiler utility for timing subroutine calls. The profiler can be disabled during compilation for speedier results. The system includes an optional 8087 floating point support. System calls seem to contain the full UNIX System III set.

The PC/IX as assembler uses an undocumented gibberish code. It seemed to have far fewer features than the IBM Macro Assembler does.

I was not able to test it, but bs (BASIC) was said to be similar to cassette BASIC in capability, with no graphics support and no full-screen editor. It supposedly has structured constructs and general process I/O (pipes).

Summary

The SCCS, lint, profiler, cb, make, and multitasking facilities make PC/IX a good working environment for C code programmers. INed, with nroff and troff, is a strong manuscript preparation facility. Spreadsheets and database managers are missing, but both are available for UNIX from non-IBM sources.

Except for the INed editor, this is a plain-vanilla UNIX System III implementation for the IBM PC. Keyboard and video support are marginal, but functions are provided for communications with PC-DOS disks and for partitioning the hard disk. PC/IX is strictly a single-user implementation. It supports multitasking, not multiusers. If the support routines are of enough interest, then PC/IX could be worth the sacrifice of the half of a hard disk it takes up.

Based on my limited review of an early, prerelease version of PC/IX, I would recommend that novices stick with PC-DOS for its superior documentation, simpler command syntax, better keyboard support, and stronger and cheaper commercial software library. ■

Will IBM Be No.1 For Ever?

The IBM-PC created a standard in an industry noticeably short of such things, and thereby gave consumers a buyers' yardstick. But Mark Peters questions its future in the face of growing consumer awareness, lower prices and inevitable advances in technology.

It has been said so many times that it has almost become one of the great immutable truths of the universe – IBM has, in a very short time, gained a stranglehold on the microcomputer market. So strong is that stranglehold that to many it seems that it will last for ever.

The very fact that a computer like the IBM-PC now has the lion's share of the business market demonstrates a couple of interesting points.

Firstly, buyers of micro-computers are still seriously worried about "making a mistake" when choosing a micro.

Secondly, people are impressed by the fact that someone owns an IBM and in most cases don't go further and consider the machine's suitability for the work in hand.

Apart from the plethora of software available for the IBM-PC, it is these 2 factors that have put the IBM-PC where it is today – in the offices of nearly every large corporation here and overseas.

The question is – will this always be the case?

To answer that question, let us take a brief look at the IBM-PC's rise to dominance. The operating system chosen for the PC, called PC-DOS (MS-DOS to everyone else), had little to recommend it over the then "industry standard", CP/M. PC-DOS has very little software and offered nothing in the way of revolutionary improvements. It was a single-user, single-tasking, command-based operating system and is still so, despite its new-version 2.00 form.

MS-DOS now has many faithful adherents, not least of all the PC-compatible manufacturers, but could not, on its own, have sold a single machine.

Technically, the IBM-PC has always been outclassed by other machines in the same price range, for example the Sirius 1 – which provides greater RAM, greater disk capacities, higher resolution, better graphics, more communication ports, and so on. Obviously, it wasn't the hardware that sold the IBM.

The announcement of the machine set no pulses racing, it did not carry the baton of new technology – in short, apart from the fact that the world's largest computer company had deemed the micro computer a worthy venture, and in doing so, augured several upheavals, the IBM-PC was a boring computer.

So, if the machine wasn't born with the mountains of software available now, its performance and specifications were unexceptional and its original operating system was nothing fancy, what sold it?

Imagine a well-respected car manufacturer bringing onto the market an overpriced, underpowered model lacking in features standard on other makes. Would we buy it at all, let alone put it at the top of the sales charts?

No. The name alone would not impress us. We might even be pleased to demonstrate that we were clever enough to see the car for what it really was.

The difference, of course, is that cars and micros work in completely different markets. The car market is mature, confident and fairly knowing. The micro market is none of these things – not today, anyway.

But this has to change. Tomorrow's customer will not be as apprehensive or wet-behind-the-ears. Today's schoolchildren already know more about computers than the average managing director. Technical terms are no strangers in the fourth year – some of those kids even think in hex. My biggest fear as a computer salesman was the know-all 14-year-old who would make me look ignorant by asking detailed questions about the interfacing of such-and-such a chip to some other.

Well-informed

When these boys (sadly, the girls seem happy to leave computers to their brothers) take their places in the business world they are going to form a very well-informed customer base. They will seek only to solve problems rather than to increase their status by buying an IBM logo for their desks.

Present users of the IBM-PC in business, having gained a knowledge of computers through use and ownership, are finding that they can conceive of more efficient ways of employing micros. Next time they go shopping they will be much more discerning.

Thirdly, we have seen, just recently, the release of several very cheap MS/DOS computers that herald the return of falling prices in micro computers. Until now, IBM has benevolently extended a price umbrella over the micro market, allowing other manufacturers room to

produce compatible machines with better specifications selling at around $1,000 less than the IBM-PC. This margin is now widening, with Dick Smith's Ferranti-made Challenger selling at $2,990, Sanyo's MBC555 at $2,495 and others on the way. The IBM now looks very expensive – just how much is that name worth—$1,000? $2,000? $3,000?

When IBM introduced the PCjr in the US people ignored it.

IBM has made a serious mistake with its junior. Its appearance will stop it being a successful business machine and its price is keeping it out of people's homes.

Meanwhile, across the North Atlantic, that iconoclast of the micro computer world, Sir Clive Sinclair, has turned things upside-down. Instead of making a home computer with a business computer price, Sir Clive has given us an impressively powerful computer for the almost derisory price of £399 ($700 approx).

Combining a multi-tasking operating system, QDOS (up to 20 tasks running concurrently within user-defined windows) with a 68008 32/16-bit processor, high-resolution colour graphics, 128k to 640k RAM, networking, and a very impressive BASIC, the Sinclair QL (as it is known) has the opposition quaking in its boots.

When you consider that Sinclair includes in the price a full suite of business software, comprising word processor, spreadsheet, database and graphics, all able to exchange data à la Apple Lisa, you really have got something to get excited about.

Things are changing. The PC caused prices to stabilize for a couple of years but now they are again moving down.

The PC created a standard which will persist for a while but will suffer as more machines like the Macintosh and Sinclair QL show that MS/DOS isn't everything.

Getting more for less – that's the way computers are supposed to be moving. The mini computer people laughed when people started talking about using micros in serious business environments – but soon had to change their tune. Now we have the same situation all over again. Micro computer salesmen look and talk like the mini sellers of old, and they too will laugh at you if you say you want a multi-tasking system and all your software for under $800.

When computers of great power and useability cost less than the desk they sit on the salesman, as we know him, will no longer exist – and trying to put a prestige front on something so cheap will not be easy. Eventually, IBM will have to fight on equal terms and it's never done it that way.

Technically outclassed and severely undercut in price while facing a market of growing discernment, the present IBM marketing/product/pricing strategies are going to flounder – it is just a case of sooner or later.

Mark Peters is a Sydney-based micro computer consultant.

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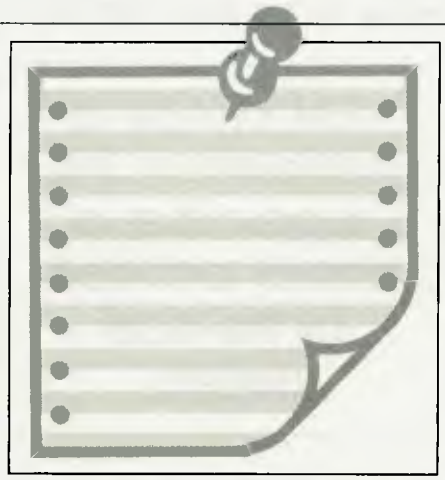
PC User Groups: IBM Signs On

IBM has finally recognized the importance of PC user groups in the US and is starting a program to help support them. Randall J. Corgan reports from America:

Personal computer user groups are a direct spinoff of mainframe computer groups such as Share and Guide, which were formed in the early 1960s to share information. They were independent organizations that began with programmers handing each other keypunch cards. Eventually the groups grew and acquired IBM's official blessing. Until recently, IBM has not provided any direct support to its microcomputer users, particularly PC owners. Most of its emphasis has been on providing information to the IBM Product Centers and authorized dealers. It was assumed that these vendors would pass along the information to individual users. Not surprisingly, this method has proved less than adequate. A large number of IBM PC user groups have cropped up across the country and have tried to fill some of the gaps left by this ineffective support.

IBM is well aware of the many valuable services provided by the user groups and is now attempting to assist them in their efforts. "User group support is not new to IBM," said E. Gene Barlow, manager of the IBM PC User Group Support Department. "We have been providing support to internal IBM user groups for the past 2 years. We are now extending that support to other user groups as well." Initially at least, this support will take the form of a monthly newsletter, a direct phone line, and a bulletin board system.



The monthly newsletter will contain the "very best technical articles appearing in local newsletters," said Barlow. To make this possible, user groups are being asked to regularly send their newsletters to the support department. IBM's newsletter will also contain information about recently announced products similar to the announcements available at Product Centers and authorized dealers. Other sections of the newsletter will include tips and techniques, editorials by user group presidents, and product updates.

The direct phone line is intended to give user group officers a communications link with the IBM PC User Group Support Department in Boca Raton. User group officers will be able to obtain assistance in forming new groups, ask questions about other group activities, and make general inquiries about IBM PC products. IBM emphasizes that this service is not a technical support line and that technical questions will not be answered.

The phone line will be active during the department's normal office hours of 8:00 a.m. to 4:30 p.m., Eastern time. Barlow adds that an answering machine will take messages during off-hours and when staffers are not available. The line will be a standard commercial line, not an 800 number. "This is to keep expenses reasonable, at least initially, and to try to limit the amount of time any one person can monopolize the line. An 800 number or other means of communicating electronically with user groups are options for the future," said Barlow.

The support department is also implementing a bulletin board system that will allow PC user group officers to communicate with other user groups and with the User Group Support Department. Barlow hopes that the bulletin board will act as vehicle for the exchange of technical information among user groups. "This same bulletin board system," said Barlow, "is used in approximately 15 to 20 of our internal IBM sites. It is software that runs on an IBM PC-XT, and it has most of the standard features found on other bulletin boards. It will be a single-user bulletin board. As volume increases we will try to

meet the demand and allow multiple users on one system or perhaps create multiple systems linked together with a rotating phone line."

"The content of the bulletin board system will be very similar to the newsletter. For example, it will contain announcements of new products as soon as they are available, information about user group activities that would be of interest to other groups, and a section where user groups can exchange technical information among themselves," he said.

Additional Services

Some additional services are anticipated. IBM would like to provide guest speakers on a regular basis to each user group, but, according to Barlow, "It is very expensive and very difficult to meet their schedules. Perhaps if we presented a particular technical topic to a few user groups, we could package the materials with an audio tape or some type of script. We could then send the package out to other user groups and allow them to make the presentation. That might be a good way of increasing access to technical information."

Assistance in the exchange of IBM PC public domain software is contemplated, but Barlow explained that this is a very sensitive area. "Verification as to whether a particular piece of software is in the public domain is a difficult task. We would not want to be involved in the infringement of copyright laws. I see our effort primarily helping user groups establish standards of documentation for public domain libraries. We might also be able to ease the exchange of lists of programs that are in public domain libraries."

When asked if IBM would actually be involved in the exchange of public domain software, Barlow replied, "There may be some programs that we would like to distribute. For example, a program was distributed about a year ago that allowed individuals who have both color and monochrome displays to switch between them more easily." This code has since been placed in DOS 2.0. When asked if IBM would assist in the exchange of a public domain program developed by an internal IBM user group member, Barlow explained that the individual has the right to make it available to the public but indicated that IBM has not yet decided whether they would get involved.

New Directions?

New directions are possible. "We have worked with internal user groups, and we've talked to many external user groups. We think we have a feel for the services that user groups would like to have us present, but we are open to suggestions. IBM is willing to listen to and work with the user groups to do whatever is necessary to further the use and knowledge of the IBM PC," said Barlow.

> IBM intends to complement the support that is already provided by the local dealers.

An IBM-sponsored national convention of PC users is one possibility, Barlow commented. "I think there are advantages to user group presidents and officers getting together to exchange ideas," he said. "Whether this can best be accomplished at a national convention, local subconventions, or even in conjunction with major trade shows, remains to be seen."

The involvement of authorized dealers and IBM Product Centers with PC user groups is another important issue. "We still feel that the user group's first line of support is the local dealer," said Barlow. "There are advantages and services that the local dealer can provide that we can't. In some cases, the local dealer could provide a meeting location for the user group, demonstration equipment, or a guest speaker. These are things that IBM cannot do on a national basis. What IBM intends to do is complement the support that is already provided by the local dealers."

Barlow said he was not aware of any restriction on IBM Product Centers displaying user group literature. "My experience with authorized dealers has been that normally they will provide a sign or perhaps space for brochures that could be passed out. Some authorized dealers will mail user group newsletters to their customers. This is carried out on an individual basis. As for the product centers, I don't know if there is a specific company-wide restriction, or if it is individual policy. I'll be glad to look into it," Barlow added.

Registration

Established user groups will have no trouble registering for the department's services. IBM has already sent registration packets to all known groups.

Randall J. Corgan is president of the IBM PC User Group in Cincinnati.

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An Ancient Art Adapts To PCs

Applications of PCs remain mostly office functions but, as Rick Collins found, some new applications can be surprising. Take sailmaking, for example:

The ancient art of sailmaking has succumbed to computer software – software written for sailmaking lofts capable of owning and operating a straightforward PC.

Some of Australia's biggest lofts have commissioned individual software packages to access big mainframe outfits here and in the U.S.

But the real growth in the industry is seen in many quarters as being small-to-medium lofts wishing to utilize the cost and time advantages of computers while retaining their capability for individuality of design.

One of these is Mitchell Sails, of near-seaside Balgowlah in Sydney.

Kevin Mitchell has for 3 years operated his Northstar Advantage computer exclusively for running a copyright software package known as Sailmaking Software developed by Marine Computer Systems of California.

Only a handful of such programs are in use in this country but Mitchell says it won't be long before they will become standard equipment.

The bugbear of the traditional method was that you began by drawing a sail – often many square metres in area – over a large section of loft floor, laying down panel after panel until the entire sail lay on the floor unsewn.

After initial seaming work, the pieces had to be machined together and the complete sail had to be laid again on the floor for final checking – all very expensive in terms of time, manpower and especially floorspace.

Some of the latest applications of PCs must surprise even the designers.

"Using the computer we get a far more accurate sail – it is literally impossible to follow the program and come up with a sail that doesn't work," said Mitchell.

"We input design parameters such as camber and so on then what I call 'hardware' which is the width of seams and so forth.

Positions

"The machine prints out a cloth cutting list and gives the position of batten pockets and reef points."

Mitchell was adamant that this did not lead to stereotyped sail profiles – quite the contrary.

"It vastly increases my flexibility as a designer. The magic is still there," he insisted.

"The program gives us the design corridors in which all sails that 'work' will fall. Apart from these limits the system is completely open-ended.

Mitchell said there was no pictorial display on the screen but that with the knowledge every competent sail designer carried around in his head, the figures that were output were more than adequate for the purpose.

Once the sail was defined in the system, the capability existed to dial up variables which would affect performance, such as wind speed.

"Ultimately the cloth cutting list streams out of the Itoh 851OA printer. We cut one panel at a time, laying them after on a graph paper grid which acts as a matrix for assembly as you can see its markings underneath the cloths.

"The panels are then sewn one by one."

Mitchell said that in the course of 3 years there had been progressive software updates generally enhancing the system's capability.

The software developers, Marine Computer Systems, added: "Because you see the results so rapidly you can optimize each sail for actual sailing conditions.

"In fact, far from limiting your creativity or delivering the same sail every time, this interactive allows you to design exactly what you need every time."

Rick Collins is a Sydney-based freelance journalist.

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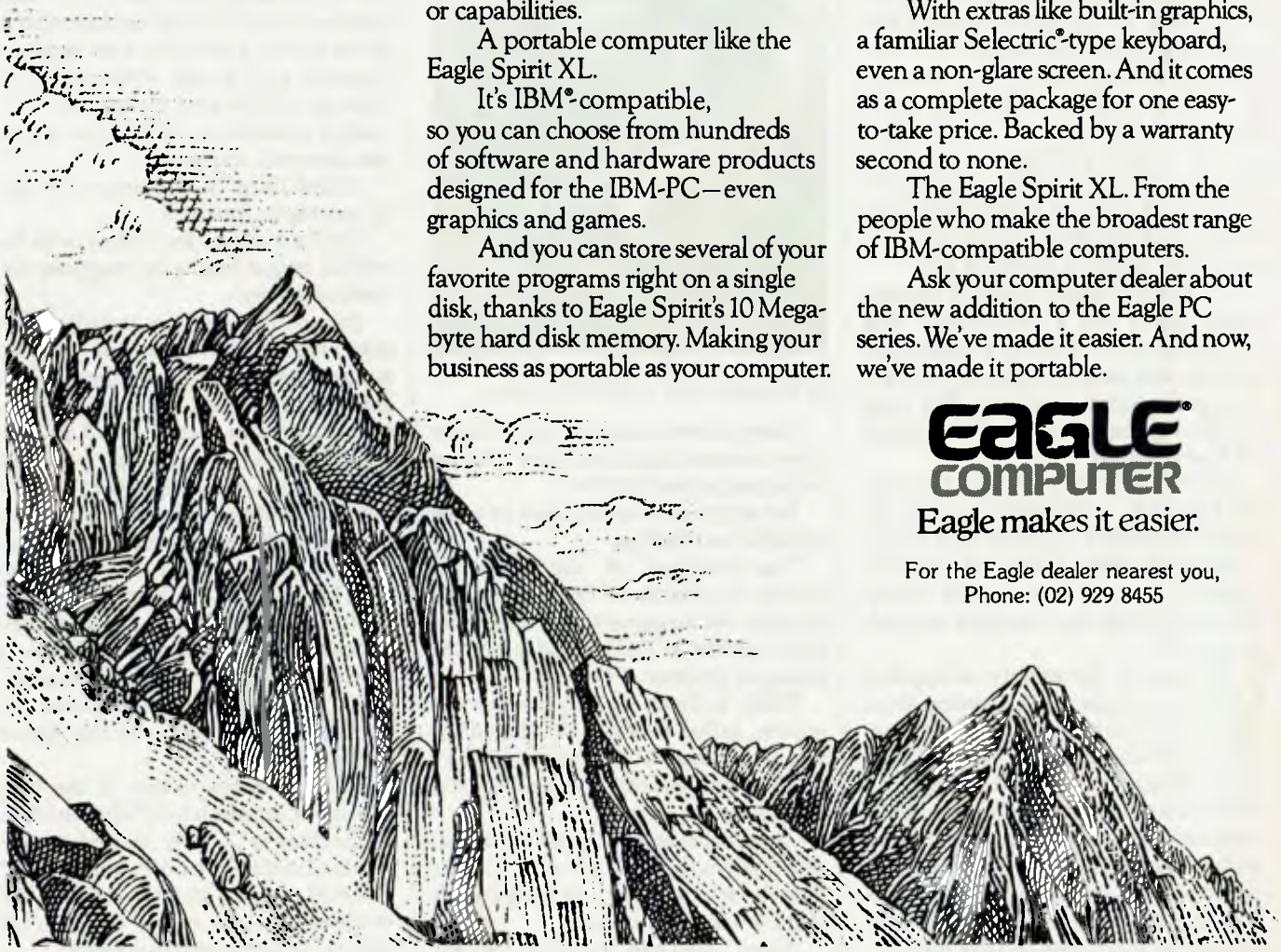

LANs Dominate COMDEX Show

Local area networks (LANs) were one of the biggest features of the recent COMDEX computer show in Atlanta, Georgia. At great expense, Kevin Howard looked at the LAN action in the Deep South for our readers.

Some 45,000 people visited Atlanta for the huge COMDEX show and a great many of them looked very closely at the LAN action. LANs are increasingly important, with over 50 released in Australia, but much uncertainty remains simply because IBM has still not yet released its LAN.

Why is IBM stalling, and should a user commit before Big Blue bares all?

A LAN is simply a cable-type system which links together small or personal computers within a restricted area.

In Atlanta, many industry leaders noted that it was a surprisingly long wait for IBM's LAN. Dealers, users, competitors, and industry analysts awoke a few weeks ago to read that IBM Corp would not unveil its much-heralded LAN as expected.

It would be another 2 to 3 years before the IBM LAN – expected to become the industry standard – sees the light of day.

However, IBM's lower-end personal computer network is scheduled to ship this month. IBM has indicated the path of its LAN.

In place of the eagerly anticipated LAN was a single cabling system from IBM, said to reduce the cost and complexity of installing or moving computer devices within a building. The IBM cabling system wires terminals together, with connections made to wall outlet plates. It replaces coaxial, twisted pair, and other special cabling.

The announcement reiterated IBM's support for token ring architecture.

Local area networks were largely pioneered by Datapoint with its ARCNET system.

Many observers say that the industry is too anxious to get moving on LAN installations to wait for IBM.

Not everyone was surprised or upset that IBM was stalling.

The president of the 5-year-old 3COM Corp, William Krause, sees a win situation for customers and competing LAN vendors. 3COM's founder was the principal inventor of Ethernet.

While at Zerox in 1973 another executive, called Metcalfe, developed the idea as a means of networking Zerox's Alto system, an early 16-bit personal computer.

Zerox continued to refine the Ethernet concept, and it grew to become Zerox's standard for networking its office-automation systems.

When Metcalfe founded 3COM, Ethernet was still a proprietary Zerox network – Metcalfe then played a key role in bringing Zerox, DEC, and Intel together, so that in 1980 the 3 Computer giants jointly published a set of specifications and design information for Ethernet. 3COM, now claims that it has made it possible to use Ethernet to connect personal computers.

3COM Corp is represented by Imagineering in Australia.

Corvus Systems Inc claims to be the world's largest local area computer network company.

Corvus claims to have installed more than 13,200 networks and 105,000 nodes (computers and peripherals). The Omninet low-cost LAN for micros has an installed base of more than 7,500 networks serving approximately 70,000 nodes. Corvus was founded in 1979, and introduced Omninet in 1981. It is a low-cost, easy to install network that is available for all top brands such as Apple, IBM, DEC, TI, and all their look-alikes.

According to Thomas Browne, international sales manager of Corvus, a newly-developed business relationship with Horizon Computers in Sydney will see Corvus at the lead of LAN sales here.

Another strong runner in the LAN race is Fox Research Inc of Dayton, Ohio, a subsidiary of ComGen Technology. It is gaining international distribution of its 10-NET/LAN, and 10-Base, software. All of these products are for use with the IBM-PC and compatible systems.

User Groups Help Each Other

PC user-group power is taking off throughout Australia, as BHP's Lloyd Borrett explains. But why not in Sydney? Users can get a lot out of this new action.

As the microcomputer industry continues to expand, the need for user education grows. This need is being filled by professional publications, software tutorials, and a new crop of microcomputer books. Computer users are being inundated with educational products.

In the midst of this enormous flow of material, the user group is a welcome support to the overwhelmed user. User groups represent the epitome of education – dialogue – offering an opportunity for users to ask elementary questions or share their technical expertise in an open forum.

User groups serve a useful purpose. Members exchange ideas and information by providing the support that dealers and manufacturers are often unable to provide. User groups dedicated to the new generation of personal computers (IBM-PC, DEC Rainbow, Wang PC, etc) are appearing across Australia. These groups are growing quickly. Members flock to meetings even when there is standing room only.

A typical example is the Melbourne PC User Group (MELB-PC), open to users of IBM and compatible personal computers. From the first meeting late in November 1983 of some 40 users, and more than 90 users at the second meeting in February 1984, the group has quickly grown in size. MELB-PC is now a registered affiliate of the Australian Computer Society and holds monthly meetings at Clunies Ross House.

Lloyd Borrett *at BHP's Personal Computing Support Centre in Melbourne.*

A typical meeting includes a presentation by a guest speaker. Past examples are: IBM Australia on PC to mainframe communications and new product announcements, ACI Computer Services on local area networks, Control Data on PC maintenance, Albert Langer on software liberation, BHP on micros as a corporate DP resource, and Robert Longair on expert systems.

Often the most rewarding part of a meeting is the "random access" session, an informal question-and-answer period that encompasses the whole range of interests from neophyte to technical heavyweight as members share in-

IBM-PC and Compatible User Groups

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formation about software, hardware, and various "bugs."

Many user groups have formed special-interest groups (SIGs) that focus on such subjects as graphics, assembly language, data base management systems, spreadsheet programs, products, and education. Because SIG members bring their talents together, they create an environment that generates new ideas and innovations.

Newsletters are another of the important services that a user group provides. At the very least, they include meeting announcements. At best, when members contribute material, newsletters provide a means of communication that supplements the group's regular meeting.

Most user groups have a software exchange. Members can swap programs they've written or buy member-written programs at low prices. The Melbourne PC User Group has a collection of some 45 volumes of public domain programs. The majority of the programs come from similar groups in the US. Some of the public domain data base, communications, educational and utility programs are among the best available, regardless of price.

A number of the bulletin board systems now "on-line" in Australia are owned and/or operated by user groups. The combination of a computer, an auto-answer modem, bulletin board software, and a telephone line creates a simple public access message service. Any user with access to a modem and a telephone line can dial-up such systems.

A bulletin board supplies group members with a means of easy communication. Members can announce group news or exchange private messages. One of the major benefits of a bulletin board is the ability to upload and download public domain software.

If you own a computer and don't belong to a user group, check the directory which follows or ask friends or computer dealers about local groups. If you can't find one, start one. A user group is probably one of the few places that has something for everyone.

Lloyd Borrett is president of the Melbourne PC User Groups and is PC Co-ordinator for BHP Melbourne.

Time Is Right for PC Fix-it, Service Vendors Say

Fixing microcomputers is not something top management can do by themselves, maintenance companies argue

BY KAREN COOK

NEW YORK—"Everyone is looking for the gold. First it was microcomputer hardware, then software—and now it's service," says Earle Humphreys, president of Computer Doctor, a New York repair store.

Nuggets of service gold lie in brand new microcomputers humming away across America, and in millions of users who still think that their machines are virtually failure-free. Microcomputer maintenance outfits are eagerly awaiting the day when those computers get old and tired—and begin to be as troublesome as an aging family car. *"They are going to fail,"* ominously predicts Darryl Olson, marketing manager for Control Data Corporation's new PC maintenance service.

Personal computer repair is already a $951 million a year industry, according to International Data Corporation (IDC) surveys, but that's small potatoes compared to the $2.5 billion the Boston-based research firm predicts for 1988. Other experts are even more optimistic, predicting that the computer-fixing industry may gross $5 to $8 billion annually within 5 years before facing the inevitable shakeout.

Third-Party Favorites

The bulk of the lucrative microcomputer service market—as much as 75 percent, some say—will go to third-party service organizations repairing a wide range of equipment. For home buyers, most third-party service will be supplied through dealers or through local "mom-and-pop" stores. Large corporations, however, will deal with many of the same companies that service their mainframes.

In the mainframe world, most big manufacturers—like Control Data Corporation (CDC), Management Assistance Inc. (MAI), and IBM—also service the big systems they make. But in the microcomputer world, especially with the growth of networking, many systems consist of equipment made by a variety of manufacturers. Even the few microcomputer companies with the resources to provide service networks are handling only one part of a complicated system. The prime example is IBM, which will service your PC, but not the Okidata printer or the Quadram board you've added on.

Probably the best-known third-party service company is MAI/Sorbus (see "On the Road with a Traveling Computer Repairperson" and "Where Do You Go When the Lights Don't Glow?" in *PC*, Volume 2 Number 5). Sorbus has 165 repair sites and 1,400 employees nationwide, repairing systems of all sizes. TRW, probably the second largest, services micros through dealers and direct corporate sales. General Electric announced plans for a major micro service network but has yet to make its presence felt, according to Ron Shugan at IDC. Xerox bought up all the extra stock from bankrupt Osborne Computer earlier this year and is busily promoting Americare, the service package it sells through computer dealers.

All of these companies handle IBM PCs as a matter of course, then pick and choose among the others. "IBM has the largest market share; IBM service is the biggest pie that can be cut up so that everyone still gets a reasonable piece," says Shugan.

Eventually, more people may consider the availability of service before they buy computers, just as they do when they buy automobiles, and that may help force lesser-known compatible makers out into the cold.

Back-Up Service

Control Data services a wide variety of peripherals with its Back-Up scheme, for example, but stocks only IBM PC and PC-XT computers. In 14 large cities to start, Control Data promises to replace faulty units and restore computer service within 4 hours. In more remote locations, for lower fees, Control Data will send exchange parts by Purolator Courier or regular mail.

CDC's Back-up is aimed mainly at the big corporate market, where Control Data has been servicing various mainframes for 14 years. Like other repair companies, CDC is hoping for an easy sell to DP managers who are accustomed to signing service contracts for their large mainframe systems. Still, "Microcomputers for some reason have top management thinking they can repair micros themselves," Olson reports. "As a result, they've got highly paid people functioning as service people. That may not be a problem now, but it will be when the micros start breaking down."

The price for a service contract with Control Data varies according to the configuration of the system used and the type of service selected. For a 256K PC with two disk drives, an IBM printer, monochrome display, and a Hayes modem, Control Data will charge a fixed annual fee of $540 for its 4-hour service. After a telephone diagnosis of the computer's ills, Control Data sends out a truck with an as-new exchange part for the broken component. Users never see the broken part again—it is shipped off to the Control Data repair center. No matter what part of the system breaks or how often, the user pays only $540.

People who don't believe that their systems will break often enough to justify the standard contract rate can opt for a flexible fee—for this system, a $204 base price, plus an extra charge every time a part is exchanged. A new IBM printer, for example, would cost $319. For flexible-fee customers who guess wrong and whose equipment keeps breaking, Control Data has a maximum charge: flexible charges will go no higher than 25 percent more than the fixed fee charge for a given configuration.

Control Data hopes that telephone consultations and parts exchange, rather than on-site repair, will keep its own and the consumer's microcomputer repair costs down to an affordable level. When users sign contracts with computer stores, the general industry rule is that repair contracts should cost about 12 percent of the computer purchase price, IDC says. When repairs are done on-site, that figure is closer to 20 percent. However, Olson says that only time and experience will tell how often micros will break and exactly how much it will cost to repair them.

Companies that sell service contracts on good computers usually stand to do well at the outset, comments Shugan of IDC. "When you buy a brand new car you don't expect it to have any problems, and in most cases you don't. A maintenance contract sold in the first 2 years of a unit's life is generally a nice piece of revenue for the maintainer," says Shugan. "After 2 or 3 years, when the disks start to show wear and the belts that drive the machine begin to break, you start to realize the maintenance potential." ■

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It's As Simple As ABS

Elimination of stocktaking and bookkeeping troubles can be the major pluses in applying small computers to retailing. Two Canberra users of a new package, ABS Cash Com Link, described their experiences to Andrew Carroll:

Albin and Eva Smith claim their retail computer saves 16 hours of manual work during a stocktake and about 40 pages of previously manually-prepared tax information details are now handled on the computer.

The Smiths, both in their 60s, run the Camping and Sports Equipment store (CSE) in the Canberra suburb of Phillip.

Lawrie and Shirley Hoad, another husband and wife business team, use ABS Cash Com Link to run their Mobil service station at Melba.

The Hoad applications include job cards, oil, petrol and kerosene sales, accounts, and accessory sales.

Developer of the package is Australian Business Systems (ABS), which has written the system around Anker Data Systems cash registers and Labtam International 3000 series computers from David Tam's Labtam International company, based in Melbourne.

The package is simply a solution to computerized stock and cash control, enabling a retail manager to know the state of his inventory and turnover at the touch of a key, from one store, or several outlets.

Says Eva Smith:

"I work on the computer in the morning when we're not so busy. I've got nearly 4,000 stock lines in the computer now. When I put an item into the cash register as a sale, I key in the item's number, – say, 1059. I look at the item in my hand and I compare it with the price on the screen.

IT DOES AWAY with all the manual analysis books...

"That way you double-check the cost of the item. So you can see there is less likelihood of a mistake being made on the price by other staff."

The system enables her to judge what is selling best or how often an item of ski gear is out on hire.

"It tells me what's profitable," says Eva. "I can bring out a different read-out which tells me the profitability of the items. I can set the computer up before I go home and it will do it overnight."

She indicated a 74-page print-out on the counter. Albin Smith added: "Why should we have to wait for it? Our computer can work while we sleep."

Says Lawrie Hoad of Mobil:

"One of the big advantages of the ABS system is that our staff don't have to worry about prices. Everything is coded and priced and all he has to do is key in a price look-up number, sell it, and as far as he's concerned he's finished with it. If something is sold off on the PLU number, then the stock total that's in the computer is automatically adjusted.

"When things run as they should, you don't have to physically run round at the end of every month and count every item to cost it up. Hopefully it will cut out what we reckon is 40 hours of bookwork a week. At the moment we're still getting everything on line. We've only got to finalise the yearly figures for the general ledger.

"It does away with all the manual analysis books and credit and debit journals."

Lawrie's wife ran the old book system parallel with the electronic system until June 30 when the old system cut out and the new one took over. "At the moment she's wondering what she's going to do with herself," he said.

Previously, says Lawrie, "you could say this month I've sold 200 packets of Winfield, but it was only at the end of the month, after you'd done all the other figure work, that you'd get to that. The beauty of it is it's got everything to the minute, virtually, if you want it."

It did not "play-up, like the older machines," and this saved time and made the staff happier, Lawrie added.

Developer ABS has linked cash-register and micro computers so that each is continually communicating with the other. As the transaction is keyed in, the computer notes it and can automatically update the relevant ledgers and accounts.

Neal A. Hummel, *managing director of Australian Business Services*

Keying in a number calls up an account name on the cash register display, typing a stock number calls up stock name and price, and typing an account number gives the previous balance.

For the retail chain, communication with ADS cash registers at various outlets is via a telephone call from head office, or wherever the computer is housed. But there is no need for the manager to be at head office to run his business.

For accounting, ABS is most familiar with the Australian-designed IMS software, but invites users to specify their own. The big time-saver, ABS says, is that the computer will post details of transactions from cash register to existing accounts and stock programs.

Cost of the system installed is about $23,000, which includes one cash register. (ADS cash registers cost up to $6,000 each.) For the small firm with only one or 2 cash registers, this might appear prohibitive, but perhaps not for 3 companies getting together to buy the one computer and system software together with password security.

The ADS System 30 cash registers, on which Australian Business Systems bases its stock and accounts-control system, is sold by 38 dealers in Australia and, according to Neal Hummel, managing director of ABS, is the second-biggest-selling cash register here after NCR.

Coles Adopts Local Area Net

Coles, Australia's largest retail company, has installed a local area network (LAN) for its personal computers.

Coles had been expanding its use of PCs, as relatively inexpensive adjuncts to its mainframe computers.

Sharing peripherals

As more and more staff used PCs for analysis of data, it became necessary to use the PCs in an as efficient way as possible. Sharing of peripherals was the answer, using the 3 COM company's local area network. Coles connected 2 IBM XTS, 4 IBM-PCs and a printer supplied by BS Microcorp to the network. Mass storage is provided by a Tallgrass Technologies 35Mb hard disk unit.

Tallgrass Technologies Australia is one of the leading suppliers of rigid-disk mass storage and cartridge-tape back-up subsystems for microcomputers. The Tallgrass family of hardfile and tape back-up systems provide formatted capacities of 12.5, 20, 35 and 70Mb, all with integral streaming of incremental file-by-file cartridge tape backup.

A PC in use in the Coles system

"The floppy disk is simply not practical in a business like ours," says Peter Quadros, controller of Coles' information centre in Melbourne. "Floppy disks may be easily lost or damaged and back-up procedures may generate large numbers of diskettes, which the information centre cannot control, but may be required in recovery operations."

The requirement for secure, high-speed back-up can be met using Tallgrass Technologies' integrated tape back-up feature.

"We had some reservations about the idea of a LAN," he says. "We wondered if we should wait while things evolved a bit more, but we have been very, very impressed."

There have been very few problems and these were quickly solved by B.S. Microcomp of Melbourne, which also provided the installation and training programs.

Tremendous

"Their assistance and consideration throughout the LAN implementation have been tremendous," said Quadros.

"We're particularly happy with the Tallgrass unit's back-up and security; we have user control and the use of economical units. It all combines to reduce cost and increase efficiency."

Hi-Tech Booms In The Tropics

Queensland, a base for some thriving computer firms, is well-satisfied with the local service which, incidentally, is doing well Australia-wide. J. J. Sullivan reports:

Queensland has become the home state for a number of rapidly-growing firms in the computer industry.

Two that have become nationally known are Hartley Computers, a computer manufacturer and software house, and Arcom Pacific, Australian distributor for many international organisations, including Digital Research, the US company that developed the famous CP/M operating system.

Today's Computers talked to the 2 Queensland companies' clients.

Allan W. Heiser, a chartered accountant of Taringa, bought a Hartley 3906 computer and the Hapas accounting

Continued on page 96

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From page 94

software about 2 years ago and has never regretted his purchase.

Before moving out on his own, Mr Heiser was a member of an accounting partnership in the city, which used Hapas software on a Digital Equipment computer. He was so impressed with the software that he chose it for his own practice, even though Hartley was then in extreme financial difficulty.

"This machine I have now, I signed the agreement with the receiver to buy this," Mr Heiser said. "Even though the receiver was there, I was perfectly happy to sign the contract and it has been a very satisfactory purchase."

Mr Heiser paid $22,000 for the 3906 computer, complete with software for client accounting, word processing, office costing, debtors and creditors ledgers and tax lodgements. A financial modelling software package cost him another $5,000.

"The report generation is the part that I like best," he said. "We do monthly accounting for clients and we do some fairly fancy reports for them, instead of just a straight profit and loss. We can pick out items and produce reports tailored to the client's specific needs.

"That would be the biggest attraction, but word processing and financial modelling are things that we use a lot, too."

Travelog Pty Ltd is a Brisbane software organization that specializes in programs for travel agencies but also produces software for doctors and does general consulting work. Don Cole, a director of Travelog, said the company bought a wide range of standard software packages from Arcom Pacific, Wordstar, Multiplan, dBASE II, Access Manager and others.

"We deal with Arcom because they're local to use," he said. "They're expanding pretty rapidly Australia-wide but they started in Brisbane and we get good service from them.

"They have good software and they get new software very quickly from the United States.

"I believe there's a dBASE II multi-user package on its way. That's been talked about for some time and Arcom has access to that sort of software.

"That makes it a good firm for us to deal with.

"They also have facilities to transcribe software for a lot of different machines and it's good for us to know that we can get that sort of thing done."

THEY'RE expanding pretty rapidly Australia-wide, but they started in Brisbane.

Mr Cole said his company had no problems with the software it bought because all the packages were standard and had been thoroughly debugged.

Travelog buys some of the software for its own use but a lot of it is resold as a bundled package with Travelog's own software.

Taxation Service Accountants Ltd, of Kedron, bought its Hartley 3900 computer with the standard Hapas package and the tax lodgement program about 3 years ago.

Mel Meyer, one of the senior directors, said the company has spent about 3 years looking at various computers after it first decided to switch over from its manual operation.

"We looked at Burroughs, Wang and others but we felt that the Hartley package was the best," Mr Meyer said. "It was allied more closely to our own system. Hartley was specialising in public accounting packages.

"It was shortly after we bought the machine that Hartley went into receivership but even then we got top-notch service. Only for what we read in the papers, we would hardly have known that Hartley was in receivership.

IF IT'S A problem that can't be fixed over the phone, they have an engineer here within a couple of hours.

"We have had a few minor problems in hardware and software but most of them are fixed over the phone. It it's a problem that can't be fixed over the phone, they have an engineer here within a couple of hours."

Mr Meyer said several of the company's clients had grown immensely in recent years and Taxation Service Accountants could not have handled that volume of work if it had not installed the computer.

The Hapas debtors program had also allowed the company to take on a number of small business clients, just handling their debtors work. "They were doing their debtors manually and we certainly would not have done it manually for them," Mr Meyer said.

"We can handle it easily now, so that's a number of clients we would not have had without the computer."

Business Scope Qld, which operates from the Brisbane suburb of Albion, is probably Australia's leading specialist in the widely known dBASE II package, put out by the American firm, Ashton-Tate.

Last year, Ashton Tate published a brochure listing the leading users of the dBASE II Runtime package. The only firm outside the United States mentioned in the brochure was Business Scope Qld.

Since the full dBASE II package is quite expensive, Ashton-Tate produced the Runtime package which can be incorporated into any special-purpose program, allowing the client to use the program without having to buy the full dBASE II. Business Scope Qld has produced these special-purpose packages for a number of industries, such as car yards, real estate agents, schools and unions.

Originally, Business Scope was dealing direct with Ashton-Tate in America but switched over when Arcom Pacific became the Australian distributor for the dBASE II Runtime package early last year.

"We deal with Arcom Pacific because they are local and because their support is good," said director Stephen Bennett. "We've had no complaints and we can only recommend them."

J.J. Sullivan is a Queensland-based freelance journalist.

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New Spelling Checker

And if you weren't A+ in spelling at school, we have a 40,000 word dictionary package that you can add on. as an optional extra.
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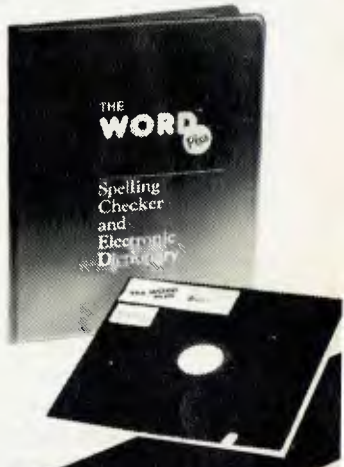

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LNP 111

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Equitylink's $150 million investment trust fund is managed with the help of a program that is the envy of other investment houses. Unfortunately, the software is not for sale.

Vietnamese computer wizard Kheim Do, 30, has invented the software that handles Equitylink's $150 million investment trust fund. Equitylink is just a baby, but a very rich one. Not even 2 years old, Equitylink now invests $150 million from 15,000 clients, in a mix of sharemarket, property, fixed interest, and the overseas market.

In 1983-84, Equitylink achieved a remarkable return of 90% on clients' funds in the Growthlink fund. This more than doubled the comparable share market return of 40% during the 1983-84 period.

Based out of Sydney, Equitylink is one of Australia's most successful trust funds.

The lithe and eloquent Do makes sure that Equitylink's 15,000 clients get their cheques and certificates in record time. He also doubles as a senior investment adviser with the trust.

Do, who came to Australia at the age of 18, studied quantitive economics at Macquarie University on a Colombo Plan scholarship and now handles an administrative computer staff of 25 for Equitylink.

The Equitylink system is based on Cromenco computer hardware, and runs an administrative system written by Do, handling the 5,000 to 7,000 client transactions monthly, and 200 to 500 buy and sell transactions.

Other investment houses like Do's client-certificate and investment accounting software. They'd like to buy it off him, but Do isn't selling. "I'm flattered," he says, "but I'm in the investment business, not in the business of selling software."

Kheim Do... *'I'm not in the business of selling software.'*

Do also plans to write an investment portfolio evaluation system.

Do made the decision for Cromenco, against the big names of IBM, Digital, and Hewlett Packard, in June 1983.

"We looked at all the big names," he recalls. "They had what we wanted, but the price was too high.

"We are a small company. When we made our computer decision, we wanted a multi-user, multi-tasking system that didn't cost too much." Do wanted a 68000 operating system. "I didn't want a Z80 or a CP/M – they are too slow," he says. "I wanted something with more power."

So Do looked at a shortlist of Wicat and Cromenco. "They weren't such big names," he says, "but they gave us what we wanted, and we didn't have to pay too much."

Do finally decided to go with the Cromenco system because of the price and the fact that the distributors, Minicomp, were very helpful in presenting the product. "Cromenco seemed more genuine. Also the price was about three-fifths of IBM, Hewlett-Packard, or Digital.

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LNP 112

Micros Make Real Estate Easy

What computer packages are available for real estate agents, and what applications will give the most benefits? Ron Harris reports:

There are two obvious divisions in the real estate agency business: property management (rentals), and property sales.

Property management used to be regarded as something of a nuisance with a low financial return. But recently many agents have begun appreciating that while the sales market fluctuates from bust to boom, the rental market keeps on generating revenue.

This is important when considering buying a computer system because it can be a great help in handling rentals, making them even more profitable.

Computer systems are normally seen as time savers but, used correctly, they can be an invaluable marketing aid. A system needn't be just an expensive assistant, it can actually give you the ability to make money where you couldn't before.

For example, it will enable you to print your end-of-the-month rentals statements (and cheques ready for signing) at the rate of 400 in just 30 minutes. Instead of taking a week to reconcile, it will take just half a day.

It will enable you to instantly find the values of sales for a particular street or map reference. At the touch of a button it will provide a printout giving inspection details, offers, disbursements, advertising costs, etc, for a particular property.

You may like to match clients against listed properties, or transmit details of

properties for sale from your computer to another office over the telephone.

Very modestly priced micro computers can revitalize a real estate agency business in both the rentals and the sales areas. The computer can give you the competitive marketing edge with better service to landlords and customers, generating more business and greater profits.

There are several property management software packages on the market. But I recommend that you buy an Australian-developed product that has current Australian development and support capability. This means you can keep up with any changes that occur in relevant laws or regulations.

Some of the features to look for in these packages are:

- The system will record all landlords, including shared properties;
- Record all flats, units, commercial properties;
- Record all tenants;
- Cater for single, or separate, trust accounts;
- Print arrears reports and send arrears letters;
- Report on vacant properties;
- Print statements and cheques to landlords;
- Record maintenance costs, disbursements;
- Keep ledger information to satisfaction of local authorities;
- Enable easy mailing advices to landlords re vacancies, arrears, etc.

Property sales/office management is the most challenging and variable area of most real estate businesses, with several sales staff, numbers of listed properties, potential clients coming and going, values constantly changing. The management of this area needs constant attention. As with rentals, it is an area where a micro can help even more than you may at first realise.

Some features to look for in a software package are:

- Ability to list current and previous properties for sale – houses, flats, commercial, land;
- Match clients with available properties;
- Statistics on client inspections, purchase offers, salesman listings, inspections, closure rates – and provide this information to sales management;
- Customer enquiries – to assist property listing selection and give historical

continued on page 102

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LNP 113

From page 100

enquiry information;

- Sales values in an area by street/map reference, to assist with property valuations;
- Profit & loss balance sheet at the touch of a button – with a general ledger that can be set up especially for real estate agents.

Word processing and financial spreadsheets are specialised software, but because they are available on general-purpose micros you can choose from a wide range of ready-to-runs.

Word processing can help you communicate effectively with landlords, tenants, clients, etc. Financial modelling using spreadsheets is one of the marvels brought by micro computers and can be very useful in a real estate office. (See the June issue of Today's Computers for a full discussion of spreadsheets.)

There are 2 obvious questions to ask when choosing a system:

(1) Is the hardware capable of handling the workload?

(2) Will the software do the job?

Next, it is important to satisfy yourself that the company from whom you are buying has knowledge and backing to provide ongoing support for both the hardware, and the software. Many aspects of the real estate business can be affected by laws and regulations relating to trust accounts, conditions of lease or sale, stamp duty, etc. It is, therefore, vital that these not only be catered for but that they can be changed when necessary. In other words, the supplier must be in a position to keep your system up to date.

SOME SYSTEMS costing $14,000 don't have much more to offer than those at $8,000.

Responsible businesses selling to real estate firms typically offer 6 months' warranty on the hardware with an option for a service agreement and 12 months' free update and maintenance of the software. After the first year a further software maintenance agreement can be taken out.

Agencies vary widely in size and operation and so do the computer systems designed for real estate firms. However, the vastly increased power of the latest micro computers, coupled with reduced purchase costs, mean that a modestly priced micro can handle the needs of most offices. We now have a situation where systems with similar power and features, but varying greatly in price, are competing with each other.

Some systems priced at around $14,000 do not have much more to offer than others selling at around $8,000.

You should make up your mind whether you want a single-user system or a multi-user system. Often the choice will depend on how the agency manager wishes to run his office, rather than technical questions.

You should be able to buy a single-user system with all the features described for between $8,000 and $9,000 (including training, warranty, sales tax, etc). A multi-user system with 2 terminals and similar features would cost about $12,000 to $15,000.

In summary, the hardware and software are now available to greatly help you in running your real estate office. But when buying be careful in your choice and check that you are getting most of the facilities mentioned in this article. Buy from a vendor who knows this market and, most importantly, can continue to support you with any necessary changes and enhancements in the future.

Ron Harris is designer of the Australian-made Executive 816 briefcase computer.

Very Complex Spreadsheets

An old idea, the 3-way budget, made possible by the speadsheet, cuts client accounting bills by $7,000.

Barry Lancaster, creative accountant, and partner with Coopers and Lybrand, has developed a way to use a spreadsheet for accounting. It's an old idea – the 3-way budget – made possible by the spreadsheet, and cuts client accounting bills by $7,000.

One school of accounting says one should "do a profit and loss," another says, "do a cash flow," a third says, "look at the balance sheet."

The spreadsheet system integrates the 3 approaches.

Barry Lancaster, who is writing a book for McGraw-Hill on Multiplan business models, explains how it works:

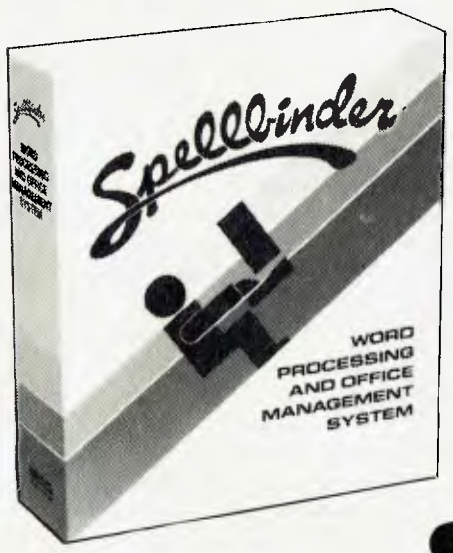
"The linking facility in Multiplan enables the production of a complex set of spreadsheets which are simple in their presentation. I call the set of spreadsheets the 3-way budget." They are:

1. Cash flow, showing anticipated cash flow from operation.

2. Profitability based on the same information as the cash flow, but now showing the anticipated profit that will be different from the cash result.

3. Financial condition – the budgeted balance sheet each period arising from the cash flow and profitability assumptions.

Continued on page 104.



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Spellbinder is also a forms handling system. After you create the format for a standardised form. Spellbinder will store it on file. Later you simply fill in the blanks on your computer screen.

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Built-in calculator does math for you.

Spellbinder can line up numbers by decimal point and calculate all the numbers in your documents. It performs addition, subtraction, multiplication and division — automatically and accurately — down columns of across rows.

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LNP 114

From page 102

"I tend to do it at home on the Apple IIe," says Lancaster.

"You have to make about a 1,000 calculations to get to the final model. You end up with a 3-page printout with assumptions."

It gives the client cash flow, profit result, and balance sheet in about 8 hours – 4 hours' consultation and 3 hours' work.

The assumptions are then tested.

"The client might ring me up and tell me: 'it's not correct I seem to be collecting my debtors faster.' So I can then change that feature on the assumption.

"Also, you can get stock purchase timing, you have to do that with another spreadsheet. You just can't do that manually.

"To produce a client spreadsheet like that, you just couldn't do it economically by hand."

With 5 hours' consultation, Lancaster gets back to clients several times with a partial answer.

"To do it manually would be a major task," he says. "You have to have a junior accountant doing cross-casting, and then you'd have to get it typed. Then you'd notice a mistake, and you'd have to recalculate and retype. It would take a week of a junior's time, and 2 days for a typist, and 3 days of my time. The cost multiple is awful.

"The junior accountant gets at it with a calculator. It costs around, say, 5 times the cost of the spreadsheet method, and the end product is nowhere near so good a job."

Spreadsheet accounting means that Coopers and Lybrand can do analysis at a price that is acceptable to clients, Lancaster claims.

"It would cost $800 to do a Multiplan consultation, and maybe $4,000 to achieve a similar result manually," he says.

Another good thing about the Multiplan method is that you can combine it with word processing.

"You can print out Multiplan onto a word processing report – it's a dead snap to do – so you have your comments next to the analysis," Lancaster says.

"Another use we made of it is for the odds and sods – we look after a fair amount of cash, usually other people's.

Barry Lancaster

We put some in the short-term money market, and we also keep an eye on the securities market. You can set up a good approach to that on Multiplan."

Coopers and Lybrand has 4 or 5 Multiplan users and finds that it can get people to understand the principles in 2 to 3 hours.

"We've got IBMs, we've got an Osborne, so people can take it home," says Lancaster. "Portability is a major benefit. It's good for people who don't have keyboard skills because some of them are scared stiff. A number of people have taken it home – and we've benefitted.

"What Multiplan has that is good is the expert system, and the help aspects. You can go to the help section and get a worked example of the problem you are dealing with. That's in the expert system. What the expert systems are – someone's thought through what you might like to do in investigating your company finances.

"It asks you questions and you just fill them in:

"What are my products?

"What is my selling price?

"What is my cost price?

"And you just roll through all the screens, answering all the questions, and at the end of the sessions you have a full spreadsheet file.

"At the end of the session you can set that file up, and save it. You get both a file, a record for that year and you also get a spreadsheet that you can try different ideas out on.

"Really, it's a misnomer – the Expert Systems, because you don't have to be an expert to use them.

Lancaster's experience at Coopers and Lybrand shows that those that get into the new PC ideas are a certain type. "People who are alive, and interested, and who get excited by change," he says. "That's the type of person who will take to personal computers.

"We made a decision that any partner who wanted could get a PC. Over 50% of the partners got one.

"A lot of them use them at home. Quite a number of the older ones are quite whiz-kiddish – it leaves some of the younger ones looking a bit stupid.

"It's not age, it's an attitude of mind.

"Innovation moves through different people at different rates. I've been searching over 3 years as to why some people take to it like a duck to water, and others don't."

Coopers and Lybrand now has 8 years' experience of computer accounting. The firm doesn't use ledgers any more. Shortly, Coopers plans to automate the entire tax return process.

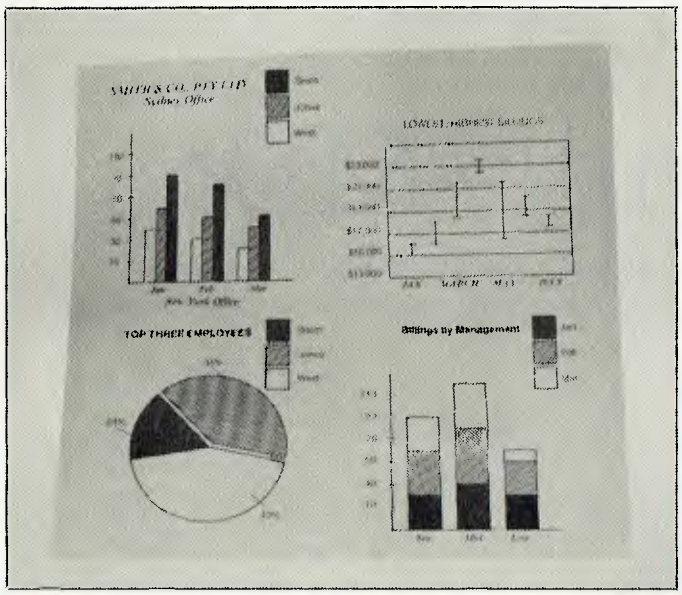
"We've benefited greatly from the personal computer," reports Lancaster, who uses the spreadsheet Multiplan and the Multiplan Expert systems software to do client financial models. "Until recently, we worked on mini computers, which were operator based – you gave your information to an operator to key in.

"But now people here are getting into PCs. Those people who know Multiplan have an extra edge. When they see a model working, they'll have an idea – and we gain from that.

"It's the depth of business knowledge that's important, and the ability to conceptualize a budget, not technical computer skills.

"We intend to get everybody skilled at it."

PEOPLE WHO are alive, who get excited by change, they're the types who take to personal computers.



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Now we are introducing our newest version, SuperCalc3, which comes complete with the kind of graphics you would expect to find in a program that does everything else so well. We give you full colour. And presentation quality. Plus eight different type styles to choose from. And new financial features like internal rate of return. We have even integrated all these functions onto one single disk. Which means you do not have to change disks all the time. Or settle for a weak spreadsheet and low-resolution graphics just for the sake of getting both in the same package.

Compatible

The SuperCalc family is available for CP/M, CP/M-86, Concurrent CP/M-86, MP/M, MS-DOS and PC-DOS operating systems. Right now, SuperCalc 3 is available for the IBM PC, PCXT AND IBM PC compatibles. And soon it will be available for a lot more personal computers.

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LNP 115

PCs And Family MDs

Some 10 per cent of medical practices in Australia are using computers – at least 50 per cent of practices will be using computers by 1990. But what does this mean to the ordinary doctor? Dr John North reports:

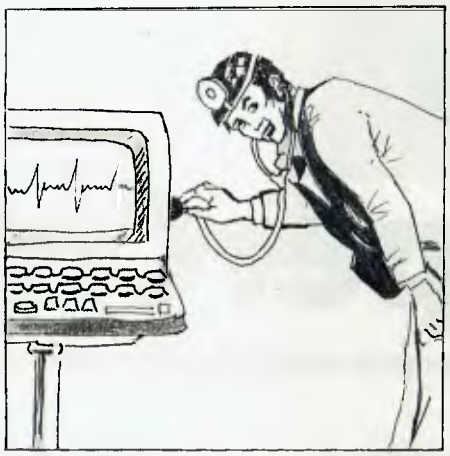
The advent of reliable micro computers with adequate capacity caused a sudden rise in the use of computers by the medical profession. Micros also gave the medical profession security in dealing with data in-house, overcoming a major area of concern – privacy and confidentiality.

Development of useful software packages and the spread of knowledge about the benefits that a computer could bring to health care and efficient practice management also encouraged the spread of computers.

Ten years ago in April 1974 at a conference in Canberra, standards of recording primary health care were formulated. Out of this grew the Royal Australian College of General Practitioners (RACGP) Health Record System used by 40% of doctors in Australia. This system is manual.

Standardization of medical recording in primary health care brought benefits to both doctors and patients. The mobility of the population, not only in terms of residence but also in the number of different doctors consulted, makes standardization of health recording very important. Lack of a standard health summary substantially increases the risks confronting a patient.

With the advent of micro computers the problem became to retain these standards in a computerized health record. In 1981 RACGP commissioned Arthur Anderson and Company to develop minimum standards for computerized medical records. The resulting document was released as a guide for the computer industry. It is also available to doctors so that they can check the format of programs that might be promoted as having a medical record.



Many computer programs are now emerging in response to medical practitioners' needs. Programs initially available were mainly financial packages, developed in most cases for users in other professions. But it soon became apparent that programs developed by or with the support of doctors in practice could clearly demonstrate their superiority. The software programs that have been of most use in this area have been developed by users and are not minor adaptations of existing programs.

Instant billing, and the bulk billing provisions that cover the health care of the large number of people receiving social security benefits, have reduced emphasis on accounting and financial packages and enabled doctors to focus on the other benefits of computers.

There is increasing realization among GPs that analysis of practice data is of great importance for planning.

Morbidity statistics, recall capabilities, word processing, drug information and interaction, patient and doctor education and assessment are but a few of the packages that will lead to better health-care delivery.

But surveys of patients in the UK, US and Australia all show that patients' chief grievance concerning doctors is long waiting times due to lateness and ineffective scheduling and appointments systems. In manual appointments systems it is difficult to prevent overbooking. Such is not the case with a computer program using restricted access to certain time slots. These slots are released progressively to cater with emergencies and patients requiring treatment at short notice or that day.

However, accurate statistical information is the basis of an effective appointments system.

Presently, many companies are providing packages with a variety of functions. Often the RACGP is asked to comment on the best packages to buy. This it feels would be inappropriate. But the College does provide standards guidelines to allow doctors to make an informed judgement. Doctors are invited to seek advice from the RACGP's computer users group and the subcommittee on computers in general medical computing.

Now that computers are here to stay and useful applications are being developed, the RACGP will set up trial practices throughout Australia using selected programs that are considered to be of benefit to health care.

These will include a master index with statistical analysis, health record summary and a drug information/interaction program. Practices involved in the trial will also be encouraged to add other programs, some of which have been developed by the RACGP with Monash University.

Dr North is chairman, computers in general practice sub-committee, Victorian Royal Australian College of General Practitioners.

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And dBASE II is programmable. That means that once you've told dBASE how to do a job once, it will remember. So when you're out of the office, anyone can run the computer, and dBASE will remembr how to do the job.

dBASE II is the most advanced information management tool available for your micro. Hundreds of independent businesses are based on it. And other microcomputer programmes measure themselves against dBASE II.

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LNP 116

Stylish, Compact, Convenient

From Televideo comes a 'refreshingly different' IBM-PC compatible that is ready-to-use in one neat package.

The Tele-XT, or TS1605H, to give it its full name, is an IBM-PC-compatible from TeleVideo Systems Inc, a major US manufacturer of computer terminals. The "H" in the official designation indicates that the Tele-XT comes with a 10 megabyte fixed disk, and standard versions are equipped with sufficient memory to use programs designed for the IBM-PC/XT.

The Tele-XT looks refreshingly different from the usual rectangular "system unit" with a video monitor perched on top. The disk drives and circuit boards, including an IBM-compatible expansion slot, are contained in a "tower" on the right-hand side of the unit.

The tower and a narrow base plate support a 34cm (diagonal measurement) green screen video monitor which can be tilted to a comfortable viewing angle and then locked in place. At the rear of the tower is the power switch, fuseholder, video contrast control and connectors for parallel and serial communication ports.

As with the IBM-PC, there are 10 function keys grouped on the left of the keyboard and a combined numeric pad and cursor control block on the right. The Num Lock key must be used to switch between entry of numbers and cursor movement functions, a nuisance when using spreadsheets but strictly in conformity with the IBM "standard" keyboard layout. The action of the keyboard is firm and positive.

The video display

The tilting screen of the Tele-XT is a great convenience and the low-glare green-on-black display is excellent.

Text is normally displayed in an 80-character by 25-line format, with attributes such as half density and flashing characters. The built-in monochrome screen also emulates the capabilities of the IBM-PC graphics adapter with a resolution of 640 by 200 dots (horizontal by vertical). This capability allows *Lotus 1-2-3* graphs, for example, to be viewed on the monochrome screen, using shading to simulate the different colours available.

Disk storage

The Tele-XT provides one floppy disk drive and one 10Mb fixed disk mounted vertically in the tower unit. The floppy disk drive is double-sided with 360K of storage space, twice that of the IBM-PC floppy disk drives. An option to the FORMAT command of the operating system allows disks to be prepared in a single-sided IBM-PC format to allow data and programs to be interchanged between computers from other vendors. The single floppy disk can also be treated as both drive "A" and drive "B" for use with programs which require 2 floppy disk drives.

The fixed disk is mounted below the floppy disk drive and is designated drive "C". For protection during transport the disk mounting is shock-absorbent and the disk read/write head is locked in position when the power is off to protect against mechanical shock.

Software and compatibility

TeleDOS, the disk operating system of the Tele-XT, is compatible with *MS/DOS 2.11* but includes additional features such as special uses of the function keys to simplify the entry of operating system commands.

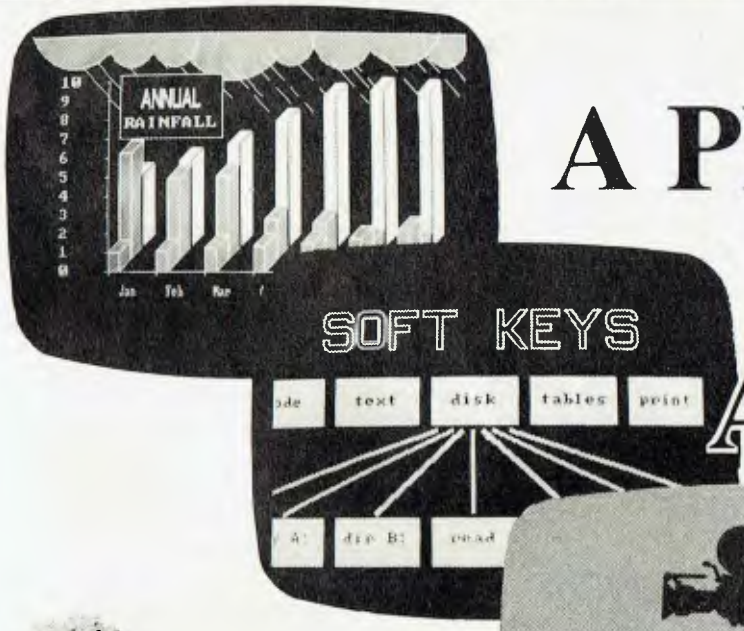
The review machine was supplied with an extensive range of programs including *SuperCalc 3*, *Lotus 1-2-3*, the *Perfect* series of integrated word processing, database and spreadsheet applications, Microsoft's *Flight Simulator*, the *Word* word processor and demonstration programs for the accompanying mouse.

Whatever doubts one may have about the usefulness of a mouse in intensive word processing applications, *Word* is an exceptional program. Extensive document formatting facilities and use of multiple screen "windows" to display different documents at the same time are just some of its capabilities. *Word* also features on-screen formatting and a variety of different type styles and sizes which make it a true "what you see is what you get" word processor.

Peripherals and expansion

Connecting parallel and RS-232C serial printers and communications devices to the Tele-XT is simply a matter of obtaining the correct cables, as the necessary

continued on page 110



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If your business graphics package is a little short on style, Executive Picture Show can use your data to create 3D bar charts, exploded pie charts, — virtually any chart you can think of. You can then use its free-form drawing capability to add the sparkle of a graphic artist. Drop in your company logo. Animate your graph to show next year's growth.

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And if that's not enough, Executive Picture Show can ask questions and check the answers it gets. So your viewers can input their responses, and you can control what happens next. The other guys with the big price tags call this 'Computer Aided Instruction'.

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Executive Picture Show was designed with the executive in mind. That's why we've reduced many steps to single keystroke commands, and we prompt you for the correct responses. And we've included a handy reference card to help you get your show on the road in superquick time.

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LNP 117

PCing The Fiscal Fiend

Two additional software packages for accountants and tax agents are out in Australia – one from the BAC Group, in Sydney, and the other from David Hartley Computer Australia, of Brisbane.

Bruce McLaren, national marketing manager, Hartley, says his product, called HAPAS-TX, sells for $2,500 to Hartley users and comes in 2 parts. They are tax preparation and tax lodgement management.

Hartley, incidentally, opened its Brisbane manufacturing plant in early July.

The BAC Group product, Intax, was originally developed 8 years ago by Goulburn, NSW, accountant Des Storrier, with regular updates. BAC says Intax was the first package approved by Australian Taxation for the 1984 year, under new guidelines.

These guidelines were detailed exclusively in the June issue of Today's Computers.

Intax runs on NEC APC, Texas Instruments Professional and IBM-PCs.

BAC's Ric Vatner (managing director) says the Metropolitan Business College, Sydney, is running one-day courses on Intax.

Vatner says buyers should ask the following questions when buying tax preparation packages:

- Can it determine which tax form is to be used, ie, A. B. S. P. or T?
- How does it handle separate net incomes (most systems don't)?
- Does it have provision for preparing depreciation and other schedules?

Apart from the above, Vatner says Intax offers:

- Calculation of tax payable or rebate due.
- Calculation of provisional tax, with provision for carried forward from the previous year.
- Generates client assessment advices.
- Handles averaging.
- It calculates dependant, concessional and zone rebates, etc.
- It calculates the tax agents preparation fee and prints statement.
- It monitors tax agents quota lodgement performance by category.
- It simultaneously drives 2 printers (one for pre-printed cover sheets supplied by the Australian Tax Office and one for the remainder of the tax return).
- It calculates the proportionate rebate due prior to Medicare.

Des Storrier claims that using Intax reduces the time needed for preparing an income tax return from more than an hour to approximately 15 to 20 minutes.

Intax sells for $2,500, software only, or for $10,264, including an APC NEC computer and 2 printers.

Hartley, market leader in supply of general computer software-hardware packages to accountants, claims there are significant user benefits with HAPAS-TX.

It combines tax return front cover and return preparation facilities with extensive lodgement control and management.

It also includes integrated word processing and list processing capabilities.

Hartley have been working on HAPAS-TX for many months with Tax Department officers, both in Brisbane and Canberra.

"We wanted to ensure not only that return formats and calculations are in accordance with department requirements, but also that they are presented in a way to ensure fast, trouble-free processing by assessors and entry data staff," a Hartley spokesman said.

Far tougher

"In the near future, far tougher guidelines will be issued to minimise department processing problems and non-conforming software packages will be denied approval. This means that tax returns produced by these non-conforming packages will be rejected."

A major feature of HAPAS-TX is its ability to put to much wider use on behalf of the client, the large pool of information accumulated for tax preparation and lodgement purposes.

This material also can be used for client mailings and for analysis purposes for the client, the spokesman said.

From page 108

interfaces are already installed. Other option boards are available to expand the memory capacity of one IBM compatible expansion slot is provided internally.

Documentation

The user manual supplied, spiral-bound in a plastic-covered ring binder, includes all details required to start and operate the system. It is well laid out and indexed and has helpful illustrations. An extensive operating system manual is also supplied in the same ring binder, although it is not separately bound. For those who must maintain the system, a technical reference manual is an available option.

THE USER manual is well laid out, indexed and well illustrated.

Conclusion

The best points of the Tele-XT are its compact, integrated design, its high degree of compatibility with the IBM-PC/XT and the reputation of TeleVideo as a manufacturer. The configuration of the system is unusual but very convenient to use, saves space and provides a truly ready-to-use computer in one stylish package.

TeleVideo personal computers are distributed in Australia by Data Peripherals Pty Ltd, 9 Avon Rd, North Ryde, NSW 2113. Phone (02) 888 5733. Price for the machine reviewed here is $7,975 (tax included).

Peter Vernon is a free-lance technical writer and journalist based in Sydney.

TOUGH PROBLEMS

FAST ANSWERS

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MICROSOFT

MULTIPLAN

Multiplan. A spreadsheet designed to give you all the answers. Quick as a flash. Multiplan can save you hours of work. With Multiplan, commands are in English. So are formulas. Name an area 'Profit' — it contains a formula 'Sales — Costs'. Easy.

To find it later, you simply 'Goto Profit.' Fast.

Multiplan can link information in different spreadsheets. When you make a change to one, every related one is changed. You have two branch offices. One in Sydney, and one in Melbourne. Head office is in Sydney. So you simply link the appropriate parts of two sheets. From then on, whenever a change is made in Melbourne, it is automatically mirrored in the Sydney spreadsheet. So every time you look at the Head Office sheet, you know you have the latest information. Simple.

And Multiplan has windows. Up to eight to be exact. That means that you can display information from eight different parts of your spreadsheet. Right there on the screen in front of you.

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LNP 118

YOUR GUIDE TO LANs

Which are the major local area networks (LANs) available in Australia? Who sells and supports them? What do they do sell for? Peter Vernon reports, with a summary you should keep:

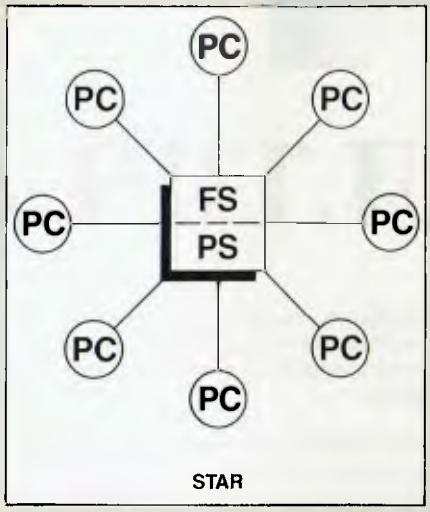
3Com EtherSeries
Imagineering
579 Harris St
Ultimo NSW, 2007
(02) 212 2411
Australian Personal Computers
Milton Terrace
23 Walsh St
West Melbourne Vic. 3003
(03) 329 8477
Type: Ethernet baseband CSMA/CD.
Topology: Bus, allowing interconnection of network segments.

Available for the IBM/PC and PC/XT. Requires an IBM-PC or XT equipped with a hard disk and at least 256K of memory as a dedicated disk server for every 8 stations on the network. The server is "dedicated", meaning that it cannot itself be used as a workstation.

Connection costs: $1,365 ex tax for Etherlink interface card required by each workstation and network server. The EtherShare software is $790 ex tax, EtherPrint, EtherMail are $790 inc tax.

Fox Research Inc. 10-Net
Software Corporation of Australia
449 Swanston St
Melbourne, Vic 3000
(03) 347 7011
Type: Baseband CSMA/CA
Topology: Bus

Available for the IBM-PC and PC/XT. 10-Net allows any PC attached to the network to access a printer or hard disk connected to the network server. The computer which acts as the server is not dedicated to this function and can also be used as a workstation. More than one



PC can act as a server in the network, and all workstations could act as servers, allowing a very flexible network configuration and total sharing of files.

Connection costs: $995 plus tax for each Network Interface Card and software required by each workstation and network server.

AST PC-Net
Telecomputing PSC
83 Mount St
North Sydney, NSW 2060
(02) 923 1266
Sourceware Pty Ltd
4/73 Albert Ave
Chatswood, NSW 2067
(02) 411 5711
Type: CSMA/CD
Topology: Bus

PC-Net supports a variety of IBM-PC compatibles and the PC/DOS operating system using a PC or PC/XT as a file server with an attached printer.

AST also manufactures an IBM SNA (Systems Network Architecture) emulator for the IBM-PC which allows network communications with IBM mainframe computers, using an IBM-PC/XT as a communications controller.

Connection costs: Interface cards and software for two PCs cost around $1,800. Each additional connection is then $806.

Sharenet X
Ampec Electronics
114 Terry St
Rozelle, NSW 2039
(02) 818 1166
Type: CSMA/CD.
Topology: Bus

Sharenet X uses an IBM XT or PC with hard disk as a dedicated file server which can handle up to 320MB or shared disk space. Up to 3 printers can be attached to the file server, but the file server is completely occupied managing the network and cannot be used as a workstation in the standard Netshare package. An option is available however which does not require a dedicated network server, but workstation functions are slowed down by the need to manage the network. In either case only one network server is allowed per network segment.

Connection costs: Typically around $1,000 a user. Ampec also distributes Netware E, which is equivalent to the 3Com EtherSeries but claimed to be more economical.

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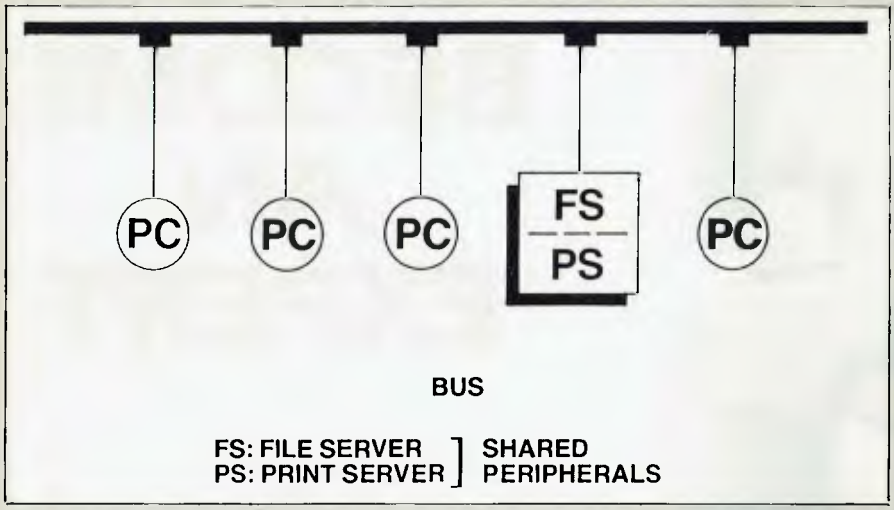


Nestar PLAN 2000 and PLAN 4000
O'Reilly Computer
6 Ryde Road
Hunters Hill NSW 2110
(02) 896 2799
Type: Baseband Arcnet token passing.
Topology: Star with burst transmission capability.

Nestar manufactures 2 network systems; PLAN 2000 for linking from 2 to 6 PCs, and PLAN 4000 for up to 254 workstations. Both systems transmit data at 2.5M bps over 90 ohm coaxial cable (as used for IBM terminal installations) and allow a maximum distance of 7,000m from one end of the network to the other.

The PLAN 4000 system supports IBM-PC, Apple II and Apple III workstations running PC-DOS or the UCSD p-system (IBM PC), AppleDOS or CP/M and SOS (the Apple III operating system).
Connection cost: $795 a station, for communication card and installation. $1295 for IBM PC/XT software, $9 for connector, $1 a metre for coaxial cable.

ARCnet
Datapoint Corporation Pty Ltd
157 Walker St
North Sydney NSW 2060
(02) 922 3100
Tandy Electronics Pty Ltd
91 Kurrajong Ave
Mount Druitt NSW 2770
(02) 675 1222
Type: Baseband Arcnet token passing.
Topology: Bus configuration to any degree of complexity (branches, subnetworks, etc.) as long as no loops are formed.

Datapoint originated the ARCnet concept, announced in 1977. The Attached Resource Computer network began as a way of sharing disk files between Datapoint's own range of small business computers. An IBM mainframe communications capability and network software called "Integrated Electronic Office" were added. Up to 255 workstations can be supported under Datapoint's RMS operating system and linked networks are also possible. Using coaxial cable, the standard data rate is 2.5M bps.

Arcnet was licenced in 1981 by Tandy Corporation. Tandy has introduced an interconnection system for its TRS-80 Model II, Model 16 and Model 2000 computers.
Connection cost: $699 a Workstation for interface card plus $599 for networking software. A 4-connection hub is $150 and an 8-connection junction box is $1,600.

Corvus Omninet
Horizon Computer Corporation
7-9 Merriwa St
Gordon NSW, 2072
(02) 498 6611
Type: CSMA/CD
Topology: Bus

The Corvus Omninet allows up to 64 workstations to be connected over a total distance of 1,200 metres using twisted pair cable, with data transmission rates of up to 1M bps. It is available for the IBM-PC and PC/XT, Apple II and Apple III, TRS-80, NEC, DEC Rainbow 100, TI Professional, Zenith and Corvus Concept computers and installation requires an interface card in each workstation and a connector box on the twisted pair cable.

Corvus has been involved with networking for many years, and the amount of software available from the company itself and independent vendors reflects this long history. Network management software is available to allow computers using different operating systems to share the Omninet network, with network utilities available for CP/M-80/86, AppleDOS and PC-DOS.
Connection costs: "Transporter pack" starter kit with 4 interface cards, 4 5-metre tap cables, 4 tap boxes and installation guide is $2,895. An interface card, cable and tap box for an additional workstation is $725 a station. Network control software is a further $200 a package.

JANET
HiSoft
8-12 Alma Rd
St Kilda, Vic 3182
(03) 534 0383
Type: IEEE
Topology: Bus

JANET (Just Another NETwork) is a version of Waterloo microNET which involves a network of IBM-PC's. The system consists of a PC which acts as a network controller and a number of PCs which act as work stations. The network controller uses a hard disk to hold the files for all users of the network. It also has a printer which is used to provide hard copy for network users. The work stations do not have any local file storage.

The work stations are connected in series to the network controller using an IEEE-488 protocol. An EPROM, supplied by WATSOFT Products Inc., must be inserted in each PC.
Connection Cost: $3000 per works station. Each workstation needs an IEEE card at $750. These are educational prices.

X-LAN, E-LAN
Time Office Computers
99 Mount St
North Sydney, NSW 2060
(02) 436 3333
Type: Ethernet CSMA/CD.
Topology: Bus

E-LAN is Time Office Computer's Im-

Greatest Range of Languages

The appointment of Software Source as the New South Wales Distributor for Microsoft products allows us to provide the greatest range of language products available in Australia.

- **BASIC**

Basic Interpreter — Microsoft
Regarded as the standard language for general purpose computer programming, Microsoft Basic can be utilized for a wide variety of applications by programmers at varying levels of expertise. CP/M-80, MS-DOS, PC-DOS.

Basic Compiler — Microsoft
The Microsoft Basic Compiler provides increased programme execution speed, and is compatible with the Microsoft Basic Interpreter. The Microsoft Basic Compiler and Interpreter form a powerful Basic programming environment. You can write, run and debug your programme interactively with the Microsoft Basic Interpreter and then compile it with the Microsoft Basic Compiler to increase programme execution speed and decrease memory space.
CP/M-80, MS-DOS, PC-DOS

Business Basic Compiler — Microsoft
The Business Basic Compiler is designed for the development of business application in Basic. It is a superset of the Microsoft Basic Compiler, with the addition of significant new commands and capabilities. Among these are multiline functions, which allow the user to define whole sections of code for optimum development of large business applications; decimal math package, to 14 digit precision in numerical calculations; and support for linking separately compiled Basic programs and routines. MS-DOS, PC-DOS

BASIC/Z-System/z
The only truly hardware independent Basic language, ideal for commercial software development. Terminal specific information is supplied in run time package which may be distributed with software developed by software houses without the need to pay royalties. Offers the most extensive basic command set available including inbuilt sort and search commands. CP/M-80, (MS-DOS to be released soon)

C BASIC — Digital Research
The BASIC for business and/or finance applications chosen by the majority of professional business applications programmers. Non-interactive BASIC with pseudo-code compiler and run time interpreter supports full file control, chaining, formatted printing, powerful random and sequential disk access methods, integer and extended precision variables (BCD arithmetic with 14 digits of precision eliminate round-off error). Long variable names, multiline functions etc. CP/M-80, CP/M-86, PC-DOS.

CB-80/CB-86 — Digital Research
A native code compiler of Digital Research's CBASIC language. As a direct enhancement of CBASIC, it offers all the features of CBASIC plus the speed and versatility of a compiler. Other enhancements include support of 32K byte strings, external multiple line functions, run-time error trapping and extended file handling capabilities.
CP/M-80, CP/M-86, PC-DOS

Personal Basic — Digital Research
Personal Basic is 100% compatible with Microsoft Basic and features debugging aids that include wholeline trace, follow a variable, single step and set breakpoints. Features: Improved line editor/does not require quote marks around file names when loading or saving a file/checks syntax upon entry rather than at run time. Full tutorial on how to use Personal Basic included. CP/M-86, PC-DOS.

- **C**

C-86 — Computer Innovations
Excellent implementation of C featuring support for the 8087 numeric coprocessor chip. Complete source of all libraries provided. Identical code can be transported to CP/M-86 or MS-DOS. Optimising version available for MS-DOS and PC-DOS only — generates Microsoft-compatible link files or assembler output. Addresses up to one megabyte of memory.
CP/M86, MS-DOS, PC-DOS (Optimiser MS-DOS/PC-DOS only)

MS-C Compiler — Microsoft
Microsoft C supports the complete C language, it is not a subset. The Microsoft C Compiler extends programming application capabilities by accepting source code files written in C, and producing relocatable machine code which can be linked easily to programmes written with the Microsoft Macro Assembler. Lets you write a wide variety of programming applications that can run on MS-DOS based microcomputer systems. Produces relocatable machine code compatible with the Microsoft linker, so C modules can be easily linked to assembly language modules.
MS-DOS, PC-DOS

DR-C — Digital Research
Full C language implementation compatible with UNIX version 7. Single and double precision floating point. 8087 numeric processor support. Enhanced programming/debugging tools. Comprehensive utility package included. Multiple 8086 memory models supported.
CP/M-86 PC-DOS

BDS-C — BD Software
Long considered the standard CP/M C compiler. Compiles very fast compact code. Wealth of Users Group libraries available. No initialisers.
CP/M-80

C-80 — Software Toolworks
Fast and inexpensive Compiles to assembler source. Includes assembler, will generate code for MACRO 80, MAC or RMAC.
CP/M-80

SSS C — Supersoft
COMPILES FAST compact code. Generates assembler output. Source is transportable to other versions under CP/M-86 & MS-DOS.
CP/M-80, CP/M-86, MS-DOS, PC-DOS

- **COBOL**

COBOL —Microsoft
Based upon Level 1 ANSI-74 standard plus most of level 2. Full, sequential, relative, and indexed file supports with variable file names. Powerful, interactive, formatted screen handling with ACCEPT and DISPLAY verbs. Programme segmentation for execution of programmes larger than memory; CHAIN command with parameter passing. Includes compiler for translating source code into relocatable object code (compatible with the FORTRAN compiler and MACRO assembler), and runtime system for interpreting object code at execution time.
CP/M-80, MS-DOS

Level II COBOL — Digital Research
Mainframe — level implementation of ANSI — 74 COBOL. Certified by GSA to HIGH with zero errors. Dynamic paging (overlays). Sort/Merge capability. Excellent implementation.
CP/M-86, PC-DOS

- **FORTRAN**

FORTRAN-80 —Microsoft
Popular science and engineering language able to compile several hundred statements per minute in a single pass, utilize extra available memory for extended optimisations, produce fully symbolic listings of machine language being generated with descriptive error messages and more. ANSI '66 (except for COMPLEX) plus enhancements, including LOGICAL variables usable as integer quantities.
CP/M-80

FORTRAN-86 —Microsoft
Meets x3.9 ANSI 78 standards at subset level. Additional extensions included to optimise FORTRAN in 16 bit environment. Full 8087 support. Linkable with modules from other Microsoft languages. Recently came out tops in comprehensive survey. (Australian PC World — June 84) MS-DOS, PC-DOS

SSS FORTRAN — Supersoft
Complete ANSI 66 version of Fortran IV. Comes with RATFOR preprocessor source code written both in Fortran and RATFOR. Advanced features such as complex arithmetic, characters, variables and functions.
CP/M-80, CP/M-86, MS-DOS, PC-DOS

- **PASCAL**

TURBO PASCAL — Borland
Real value for money. This is the faster, most compact and complete Pascal available. Excellent documentation, a full screen editor which is automatically invoked from the compiler. Compile or runtime errors will display the exact spot of your source file where the error occured. Even at ten times its price it would still be excellent value. Sample spreadsheet and business applications provided in source code.
CP/M-80 (Z80 only), CP/M-86, MS-DOS, PC-DOS

MS PASCAL Compiler — Microsoft
Offers fast numeric processing in conjunction with an 8087 coprocessor; and provides 8087 emulation software if your computer does not have an 8087 chip. Features optional double precision real numbers in IEEE floating point standard format. Reduce code development by permitting modules written in 8086 macro assembly language, MS Fortran, and MS Pascal to be linked together into one programme. Extensive programme development features such as: address types, constants and functions of Array and Record types, Super Arrays, control flow features, separately compiled units, variable length strings.
MS-DOS/PC-DOS

PASCAL/MT+ — Digital Research
The Pascal/MT+ system provides a compiler, r, linker, debugger, disassembler with excellent documentation. Inline assembler and good string handling. Optional syntax-checking editor (Speed Programming Package) available.
CP/M-80, CP/M-86, PC-DOS

- **LISP**

muLISP/muSTAR — Microsoft
LISP programming language suitable for artificial intelligence applications. Applicative, recursive, language ideal for describing complex mathematical concepts. Provides interactive environment for human machine communication. Interpreter uses little memory yet includes 83 LISP functions. Has infinite precision integer arithmetic expressed in any radix from 2 to 36. Includes MuSTAR Development System with display-oriented resident editor, trace debugging facilities, and trace facility and library of useful functions and entertaining sample programmes.
CP/M-80, MS-DOS, PC-DOS

- **SIMP**

muSIMP/muMATH — Microsoft
A high level programming language suitable for symbolic and semi-numeric processing (muSIMP); and a language interactive symbolic math system (muMATH) written in muSIMP that perform sophisticated mathematical functions. Performs logarithmic, exponential, trigonometric simplification and transformation, symbolic differentiation with partial derivatives, and symbolic integration of definite and indefinite integrals.
CP/M-80, MS-DOS, PC-DOS

- **PL/I**

PL/I — Digital Research
A high performance professional programming language. The programmes you create with PL/I are extremely efficient. That's the result of the state of the art optimization and decades of compiler experience behind Digital Researchs PL/I. Structured control statements. Fixed binary integers. Single and double precision floating point. 15 digit arithmetic. Bit string operations. Character string operations. Full control of compiler storage allocation. User controlled error handling. Supports Display Manager and Access Manager. Supports CP/M Graphics.
CP/M-80, CP/M-86, PC-DOS

- **FORTH**

BS FORTH —Boundary Software
Designed here in Australia, BS Forth is an extended version of FIG-FORTH model 1.1 interpreter/compiler. Interactive, fast, flexible, BS Forth features floating point numerics and the ability to access standard CP/M files.
CP/M-80 (Z80), Turbodos

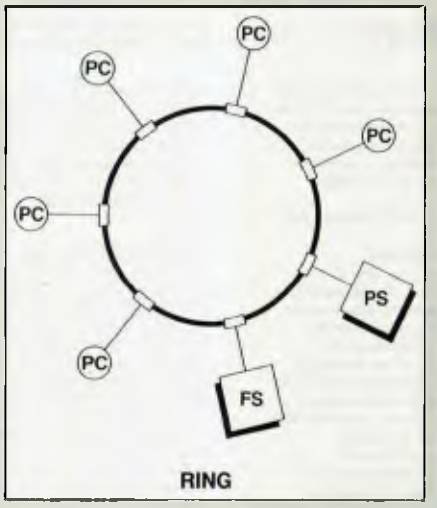
- **LOGO**

Dr LOGO — Digital Research
Excellent implementation of Logo for IBM PC. Very strong on list management and turtle graphics. Dr Logo is based on proven educational philosophy that you learn by doing Ideal for home or office, and as a first programming language.
IBM only.

plementation of the Ethernet standard. X-LAN, an enhanced version designed to work with Time's Australian manufactured 32-bit X-LAN computer system. Using coaxial cable, speeds of up to 1.2M bps are possible over a range of 2,000 metres. MS-DOS 2.0 and CP/M-86 are supported.
Connection Costs: With one Time 5600 unit a 5100 E-LAN costs $5,500; a 5800 ELAN costs $13,500. X-LAN available June, 1985.

NCR DecisionNet
NCR Australia
8 Napier St
North Sydney, NSW
(02) 922 0161
Type: CSMA/CD
Topology: Bus

NCR DecisionNet is a specially commissioned version of the Corvus Omninet designed to work with the NCR DecisionMate V personal computer and systems from other vendors using MS-DOS, CP/M 2.2 and TurboDOS.



The networking system has 2 major components, the NCR Omninet and the MODUS dedicated file server, and can use either Omninet style twisted pair cable or lower speed asynchronous RS-232C serial communications links.

Using Omninet up to 63 PCs can be used on cable system up to 1,200 metres from end to end with signal amplifiers every 300 metres. RS-232C links can be used for point to point communications within the Omninet network to distances of up to 300 metres at 19.2K bps.

NCR's network software uses the CP/Net concept developed by Digital Research Inc. NCR has developed the software for use with the DecisionMate V, Apple II and IBM PCs, with support for different operating systems, network diagnostic systems and electronic mail utilities.

PROPRIETARY SYSTEMS

Cromemco C-Net
Minicomp
104 Mount St
North Sydney, NSW 2060
(02) 957 6800
Type: CSMA/CD
Topology: Bus.
C-Net was designed by Cromemco to allow networking of its System 1, 2 and 3 computers. Although it uses readily available components and the company has declared C-Net open for adoption by other manufacturers, no other vendors have announced support for the system. Software is available under Cromemco's Cromix operating system, a system adapted from Unix specifically for Cromemco computers which in its network version supports electronic mail and file swapping using the same command structure as stand-alone Cromix.
Connection costs: Assuming an existing Cromemco installation, networking with C-Net costs approximately $1,500 a workstation for interface hardware and cabling.

The WEB
President Computers
100 George St
Hornsby, NSW 2077
(02) 476 2700
Type: Baseband CSMA/CD
Topology: Bus
Designed by Centram Systems Inc and currently available for use with Kaypro Model 2, 4 and 10 transportable computers, the "WEB" allows up to 20 (recommended maximum) Kaypros to be connected over a range of up to 600 metres using 4 conductor twisted pair cable. Up to 16 disks may be shared between network users, including the fixed disk storage of the Kaypro Model 10. Each computer in the network can act as either server or workstation so no dedicated network server is required.
Connection costs: $350 a workstation for internal interface circuitry plus installation cost.

Case Communications Systems
1-3 Rodborough Rd
Frenchs Forest, NSW 2086
(02) 451 6655

Case Communications Systems supplies a wide range of data communications products including terminals, modems, multiplexers, X.25 packet switching products and network control systems.

Multiplexers allow a number of terminals or computers to share a common communications line, considerably reducing the cost of point-to-point data transfers in systems with from 2 to 2,000 devices. The DCX multinode switching multiplexer is one of the newest products, providing automatic message routing, port selection, protocol conversion and X.25 packet switching.

Also available is "Grapevine", a system which allows PCs, mainframe computers and terminals to communicate over internal telephone wiring without interfering with existing voice communications and PABX functions.
Connection costs: The DCX line starts at low-end 4 ports at $1,500 and ranges up to 32 ports at $11,500.

IBM announcements

IBM has been relatively slow to produce a local area network as most of the company's efforts have focused on SNA, which is adapted for communication with mainframe computers by user terminals. Just announced however are plans for a local area network based on twisted wire cabling to "wiring closets" or junction boxes, each of which can support 64 PC workstations connected to wall outlets. Individual junction boxes will be connected by optical fibres.

Due to pressure of space, further LANs listings have been held over until next month.

"Small businesses don't become big businesses by turning down opportunities like this."

Arguably the most cost effective small business computer available, the Sigma/OKI is already the second biggest selling microcomputer in Japan.

With advanced business applications both in word and data processing, Sigma/OKI offers as standard a host of features which are normally only available at extra cost.

Features such as ◇ In-built printer. ◇ Dual disk drives (up to 2MB storage). ◇ R232-C interface. ◇ Light pen interface and calendar clock. ◇ High resolution colour monitor. ◇ 30 programmable function keys. ◇ 3 I/O slots.

Plus over $1,500 worth of CP/M, BASIC, Wordstar, Mailmerge, Calcstar and Spellstar software free.

And the Sigma/OKI range starts from just $3,300*.

*excluding sales tax

For more information and the name of your nearest dealer, please contact Tony Barkhazen on (02) 439 6211.

SIGMA/OKI

A division of Sigma Data Corporation,
1 Waltham Street, Artarmon.

Stewart Roache Watson SDC042

In the Beginning Was The Word

Compuchurch? The Church Shepherd module? The Adam II? Or, what about The Word Processor? Yes, we're talking about computers in God's service. They're doing a heavenly job.

Don't be surprised, when you finally make it up there to the Pearly Gates, if St Peter is tapping out your code number on an IBM keyboard – the big mainframe in the sky and all that – because down here on earth his flock are getting into the miraculous micro in a big way.

The Americans, who have always had the reputation of having more religions than anyone else and thus a market big enough to justify the expense of developing software for it, have come up with some excellent and successful church management systems in recent times.

Following their lead an Australian company, Datacare, has opted to specialize in this area of the marketplace and in future will concentrate its efforts on developing and installing ecclesiastical computer systems.

Brisbane-based directors, Gail and Bruce Riddel, believe they are the first in Australia to do so. Both committed Christians, as well as computer professionals, the Riddels found themselves frequently being asked in church circles for information on possible computer systems to manage church business.

Says Gail Riddel: "Many churches are looking for ways of assisting them to be more efficient and to streamline their administrative duties to allow more time to be spent in caring for the community.

"With the assistance given to small business by micro computers, it is only logical that churches should want to make use of this new technology."

Pam Robson

Nevertheless, Gail believes that it will take a little time to educate the more conservative elements in the Australian ecclesiastical market. In the past, she says, church computer systems owed their existence to the enthusiasm of a few technologically-minded, individual ministers. Nowadays, however, more and more churches and their administrative bodies are undergoing computer conversions.

The Riddels carried out their own evaluation of the available software, mainly through American channels, before selecting a few packages they considered suitable for Australia. Compuchurch is perhaps their own favourite.

"It is well written," says Gail. "It is easy to operate and requires only a simple procedure to install."

Compuchurch comprises a series of separate modules each designed to handle a specific task. This means that a church operating on a tight budget can purchase one or 2 modules and add to them as the cash becomes available.

According to the Riddels, most churches begin with the Church Shepherd module – a church management system with powerful search capabilities for congregation management. The database can store information categorized by a number of criteria which means that the system may not only hold details of the names and addresses of parishioners but also talents and organizational abilities.

Thus, an instant search can be made for a substitute Sunday school teacher who can also play the piano – or tabs can be kept on all parishioners who are in hospital.

The Church Shepherd Module is generally teamed with the Church Accounting Module, a package designed specifically to set up a church budget.

The Adam II is another American system high on the Riddels' list of preferences.

However, this one is more appropriate for the computer-experienced minister. Adam II is written in dBase which, while requiring more knowledge to

Gail and Bruce Riddel

operate, enables the user familiar with dBase to modify the system to his own particular needs. Both Compuchurch and Adam II can be run on a variety of micro computers.

For sermon writers and theological students comes The Word processor, a computerized version of the King James Bible. The Word has the ability to locate all words and phrases specified by the user: it can perform a frequency analysis for a word or phrase – a valuable assistance to those studying the Bible for writing styles and authorship. It has the ability to cross-reference all research; and the facility to transfer any portion of text to a printer.

For churches that put out weekly newsletters or bulletins, according to Gail Riddel, the next logical step is to word processing.

"It can save time and money on weekly newsletters as well as on a large percentage of the church's repeat correspondence," she says.

Word-processing newsletters, computer-selected choirs – it seems that the 20th Century has changed the church in more ways than one. Nowadays, you won't find Father McKenzie darning his socks alone at night – he is more likely to be found tapping his sermon into the computer or playing a quick game of Pacman before Evensong.

But, as has been written before, God sometimes moves in mysterious ways!

Pam Robson is a freelance journalist based in Brisbane.

Imagineering v Arcom

The troops in a looming market war are Framework and Symphony – both integrated applications software packs – with each separately launching in Australia as we go to Press.

A market war is imminent between the vendors of 2 new integrated applications software packages for personal computers. Arcom Pacific markets *Framework*, *Imagineering* sells *Symphony*.

Both *Lotus 1-2-3* and *dBase II* users will be able to upgrade to *Framework*. *Lotus* users can also get *Symphony*, but *dBase II* users can go only to *Framework* at present.

We have to wait and see, Ian Harwick of Arcom Pacific says: "It sounds great (an upgrade for dBase II users), but the trouble is that they can sometimes do these special things in the US and we can't do them out here."

Copies of *Framework* disks cannot be had for love or money in Australia, at the time of writing. But Harwick, and Madeleine Long, product manager for Imagineering say they will be available soon.

Both products should be available in Australia in late July. They were released on July 2 in the US.

Reports say that despite an effective Lotus (marketing campaign for *Symphony*, early comparisons favour *Framework*. *Framework* is FAST, say US reports, and simpler to use than *Symphony*.

George Weston, hotline support manager for Sourceware, has used *Symphony* in the US. He was impressed by the communications facility. In a US demonstration he attended the demonstrator dialled the DOW-Jones stock service

Laurel Allen

and put data through into an analysis spreadsheet. He notes that *Lotus 1-2-3* macros won't work in *Symphony* because *Symphony* has a different menu structure. The database will be a popular feature, he says. It is particularly easy to use. Weston says, "It is less complex to put data in, and has the benefit that you don't have to build large macros."

Framework will cost about $795, or about $225 to upgrade from *dBase II*, a spokesperson for Arcom Pacific said. It requires 256K RAM, and an IBM-PC or XT.

Symphony will cost $995 or $300 to upgrade from *Lotus 1-2-3*. It also requires 320K RAM, IBM-PC or XT, or Compaq, MS/DOS 2 02 2.1, 2 double sided disk-drives, or one disk drive and one hard disk. It consists of 5-7 disks and 3 manuals.

□□□

For all PC users who start out with one system on one desk there comes a time when they want to get their box to talk to other boxes. When they feel like this they find that the affair may end up as a more complex relationship that they envisaged. Some people give up in despair. Others pay bureaus to provide electronic mail. Others get a network.

This is a way to connect a group of free-standing personal computers together.

But the problem with a network is that when they had just one lonely little PC, they naturally bought software and an operating system that worked for that lone computer, like CP/M and PC/DOS and MS/DOS. Or maybe they got what are called multi-tasking or concurrent software, like MS/DOS 2, and Concurrent CP/M, that could do a number of things at the same time.

But when they get a network, they discover, to their horror, that their single-user software, no matter how cutely concurrent or how divinely multitasking, won't work safely on a network. They need to get multi-user software.

If they don't when people on the network all start working at once, that data falls off the edge into limbo. What's more they lose their privacy. Because they can't lock data.

Continued on page 137

AN EXCLUSIVE GUIDE

SOFTWARE LOCATOR

An update guide to new in-stock listings of business and educational software in Australia, managed by Laurel Allen

What are the latest important software packages for business, education and government users in Australia? Our Software Locator section again this month has the answers.

Software Locator is easy access for users and dealers looking for software which will help them.

Suppliers and distributors, please write to us so we can keep users up to date. For space reasons, we must limit descriptions of packages to a reasonable length.

And readers, if what you are after isn't here, call us. It could well be that we can help you very quickly get what you want. Should any of the following packages not live up to their descriptions, let us and the distributor know.

Prices are all recommended retail, with sales tax included. Skill level is estimated in this way – if it takes more than a few hours to grasp the idea, then it's intermediate. If it's novice, that means almost anyone can get into it immediately. If it requires specialized computer training, then it's technical.

If you want to list your software in the Locator, *please send them in the format you see here.* This is essential! Write the address, and the names of the products, in lower case. Do go into some detail about your product, especially how it differs from other similar products.

Try to write a jargon-free description if possible. When it comes to requirements, specify what is needed in RAM,

and the variations for each operating system you list, if you can. If it comes with a tutor disk and a hotline service, say so. Say something about the mass storage if it is appropriate.

Do make an effort to write specifically: Number of cells, number of words in dictionary, numbers of fields over which it will sort. Please send your listings, questions, and suggestions for improvements to Software Locator, Today's Computers, Box 506, GPO. Sydney. Mail deadline for our September issue is July 25.

Communication

XCOMPAC
Telehome Computers
PO Box 215
Northbridge, NSW 2063
(02) 958 2247
This is an automatic messaging system for the Digital Rainbow which works with *Compac*. This gives 5 automatic messaging facilities; it permits an unattended Rainbow to pass messages on request to any communications facility capable of simple character by character transfer. Requirements: Digital Rainbow 100, Auto Answer Modem (UDM-1200 recommended). Skill: Novice. Price: $250.

COMPAC
Telehome Computers
PO Box 215
Northbridge, NSW 2063
(02) 958 2247
Compac provides an Australian-designed package for the DEC Rainbow, with 4 communications benefits. *Compac* provides 2-way transfer of data between the Rainbow and host computers. It provides 2-way transfer of data of software under protocol control between two Rainbows using Compac. Requirements: Digital Rainbow, auto-answer Modem, UDM-1200. Skill: Novice. Price: $150.

TELEX OPERATING SYSTEM (TOS)
Offcom
116 Alexander St
Crows Nest, NSW 2065
(02) 438 4199
You can now send your telex messages from your PC screen. TOS comprises 2 components – the software package and the telex interface, connected through the RS 232 interface. Messages can be held for sending at a pre-determined time, eg after 6 pm, to take advantage of off-peak reductions. Requirements: MS/DOS, PC/DOS, Hasler telex unit. Skill: Novice. Price: $5,000; includes Hasler.

Graphics

KPAINT FOR KNOWLEDGEMAN
Micro Data Base Systems
178 High Street
Prahran, Vic 3181
(03) 529 6372
KPaint is a versatile interactive forms painting component for *KnowledgeMan* that allows creation of highly polished customised forms on colour or monochrome displays. *KPaint's* menu-driven structure allows easy creation of colour blocks. With each block you can shrink it, expand it, move it, change its colour, put another block on top of it. Requirements: MS/DOS, CP/M 86 Knowledgeman. Skill: Novice. Price: $262.

IBM-PC COMPUTER GRAPHING ASSISTANT

IBM Australia
168 Kent St
Sydney, NSW 2001
(02) 234 5678
Graphing Assistant produces up to four line bar or pie graphs as a single chart using information from *IBM Filing Assistant* or *IBM Reporting Assistant*. Requirements: PC, XT, PJnr, 128K, double sided disk drive, IBM Filing Assistant or IBM Reporting Assistant. Skill: Novice. Price: TBA.

KGRAPH FOR KNOWLEDGEMAN
Micro Data Base Systems
178 High St
Prahran, Vic 3181
(03) 529 6372
Use *Kgraph* together with *Knowledgeman*, and you plot 11 graph types in colour directly off the *Knowledgeman* database and spreadsheet. You can do this directly, without having to return to the main menu. You don't have to shuffle disks back and forth. You also graph directly off the database. *Kgraph* also lets you do free-form symbols and logos with its bit-mapped power and the Kmouse (soon to be released). Requirements: MS/DOS CP/M86 Knowledgeman. Skill: Novice. Price: $447.

DR GRAPH
Arcom Pacific
P O Box 13
Clayfield, Qld 4011
(07) 52 3862
DR Graph is an interactive software application that delivers a full spectrum of effective business graphics. It lets you create professional, presentation-quality graphs and charts. You can even build graphs directly from electronic spreadsheets, such as *SuperCalc*. *DR Graph* eliminates guesswork by making initial design decisions for you. It automatically labels the axes and plots your selected values. Chooses the size of letters, line styles and much more. Requirements: CP/M-86 or concurrent CP/M-86 with GSX. This includes NEC APC, RAINBOW, IBM-PC, PC-XT and compatibles. Skill: Novice. Price: $355.

Project managers

PERTMASTER
Intelligence
204 Clarence St
Sydney, NSW 2000
(02) 267 1711
(03) 51 1406
This easy-to-use management tool can handle up to 1,500 activities in either the "activity on arrow" or "precedence" method of analysis. Its special functions include: automatic time analysis, for plotting start, finish and critical path; production of resources histograms; ability to show time analysis results, barcharts and resource histograms on screen; ability to merge networks and produce reports in a number of standard or user-defined presentations. Requirements: 64K, 128K, CP/M or MS/DOS. Skill: Novice to intermediate. Price: $1,600.

Database managers

REVELATION
Data Peripherals
9 Avon Rd
North Ryde, NSW 2113
(02) 888 5733
Revelation is an integrated Pick-compatible relational database which consists of R/Design, and applications development system, R/List, a report generator with English-like statements, R/Basic, a procedural language and superset of BASIC, and R/Net, a terminal emulator and data transfer facility. *Revelation* operates on top of MS/DOS in the TeleVideo Tele-PC, or Tele-XT family of IBM-compatible PCs. Requirements: 320K, RAM 8087, MS/DOS, and 320K diskette or fixed disk. Price: $11,505 (includes hardware). Skill: Prime users no problem. Others, intermediate.

ARCHIVE-BIBLIOGRAPHY-FILING
Lothlorien Software
GPO Box 1033
Sydney, NSW 2001
(02) 389 4023
Archive – Bibliography – Filing is programmed for home, office or school use. Information on ANYTHING can be filed under ten user defined headings. Requirements: Apple II. Skill: Novice. Price: $150.

IBM-PC COMPUTER REPORTING ASSISTANT
IBM Australia
168 Kent St
Sydney, NSW 2001
(02) 234 5678
Reporting Assistant is an enhanced version of the IBM Personal Computer PFS: report program that sorts and displays or prints them in tabular form. May be upgraded from IBM PFS Report at minimal cost. Requirements: PC, XT, PCjr, 128K, double-sided disk drive. Skill: Novice. Price: TBA.

IBM-PC COMPUTER FILING ASSISTANT
IBM Australia
168 Kent St
Sydney, NSW 2001
(02) 234 5678
Personal Filing Assistant is an enhanced version of the IBM Personal Computer PFS: file program that enables individuals to design filing systems, add or delete items, and quickly search and upate the records. May be upgraded from IBM PFS File at minimal cost. Requirements: PC, XT, PCjr, double-sided disk drive, 128K. Skill: Novice. Price: TBA.

DBASIC
Sofco
225 Hawker Dr
St Lucia, Qld 4067
(07) 371 7200
DBasic has been developed by the Queensland company, Sofco Pty Ltd to provide a complete general-purpose database management system with wide scope for "do-it-yourself" development of data management. *DBasic* is a fully relational database language integrated with interpreted Basic. Although complex in design, *DBasic* is simple to use, with only 27 commands providing total control and flexibility of all data. Requirements: Most micros, 32K. Skill: Novice. Price: $595.

Vice President of New Technology, Ashton-Tate — Wayne Ratliff said:
"Although we have kept all the features of DBASE II that have made it so popular, we rewrote DBASE III in 'C' language from the ground up to have greater capabilities, storage, speed, power and ease of use, and to take advantage of the power and technology of 16 bit and larger computers."

dBASE™ goes III

BETTER

Features of DBASE III

1. Over 2,000,000,000 records per data base
2. 128 fields per record
3. Variable length text field up to 4K bytes per entry
4. 4,000 bytes per record
5. 10 data base files in use simultaneously
6. Fast internal sort and improved indexing
7. 16 digits of numerical accuracy
8. Enhanced reports capability
9. On line help system
10. Full screen formatting

System Requirements

1. IBM PC XT and all PC compatible computers
2. Minimum 256K bytes RAM, two 5¼" floppy disc drives
3. Monochrome or colour display, any printer with at least 80 columns
4. PCDOS 2.0 operating system

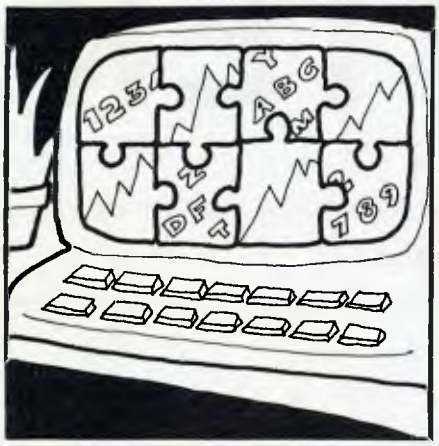
ASHTON·TATE™
distributed by arcompacific

Contact your local dealer for more information or write to Arcom Pacific, Freepost 2, P.O. Box 13, Clayfield Q 4011

in assembly language. Requirements: MS/DOS, PC/DOS, C/PM 80-86. Skill: Novice. Price: $695.

SUPERWRITER FOR APRICOT
Barson Computers
335 Johnston St
Abbotsford, Vic 3067
(03) 419 3033
The *SuperWriter* program turns your Apricot into a professional word processor. With the *SuperWriter* word processing program, you can write any kind of document, large or small, whether it be a personal letter, business report, school thesis, resume, form letter or computer program, on your computer, and save the document for future reference or revision. You can determine how you want the finished page to look (page size, line width, margins headers, and spacing). Requirements: Standard Apricot. Skill: Novice. Price: $548.

Integrated products



SYMPHONY
Imagineering
579 Harris St
Ultimo, NSW 2007
(02) 212 1411
A development from *Lotus 1-2-3*, *Symphony* combines word processing and database (with a capacity for more than 8,000 records) with forms and mail-merge capabilities, state-of-the-art communications, spreadsheet (8,192 rows by 256 columns), and business graphics (8 graph types), into a single, integrated program. There are 3 major ways to expand the *Symphony* system. Users can: (1) bring information from other computers or programs into *Symphony*; (2) develop dedicated applications with the product's command language; or (3) eventually enhance the product's built-in features by means of specially designed "add-in" programs. Requirements: PC/DOS, 1 disk drive, 320K. Skill: Novice. Price: $795, or $300 trade-up from *Lotus 1-2-3*. Price: One user: $695 or $495 trade-up from Lotus 1-2-3.

Education

UNIVERSAL TUTOR
Lothlorien Software
GPO Box 1033
Sydney, NSW 2001
(02) 389 4023
The *Universal Tutor* is a program designed to utilise the multi choice answer system used in so many of our schools and also in the High School Certificate examination in N.S.W. Requirements: Apple II, IIc. Skill: Novice. Price: $75.

ENGLISH: SENTENCE CONSTRUCTION
Computer Tutor
5/191 Victoria Road
Gladesville, NSW 2111
(02) 816 3178
English: Sentence Construction assists learners acquiring skills necessary for constructing complex sentences in English. The program presents learners with tutorial-type material on the rules of grammar as well as with interactive exercises, short quizzes and examples which illustrate the way in which the rules of grammar are applied. Requirements: Commodore 64. An age of 12 +. Price: one user $69.95.

THE INTERACTIVE AUTHORING SYSTEM
McGraw Hill
4 Barcoo St
Roseville, NSW 2067
(02) 406 4288
This is a versatile and comprehensive tool for creating computer-based training on the IBM-PC. It turns the IBM-PC into a training system that can combine text, graphics, video-taped materials, questions and answer analysis, exercises, and even computer simulations. Requirements: IBPC, 128K 2x320K dual disk drives, color card, async card, RS232. Video monitor, video controller, video player, remote controlled. Skill: Intermediate. Price: $2,400.

THE SPELLING AND SPEED READING TUTOR
Lothlorien Software
GPO Box 1033
Sydney, NSW 2001
(02) 389 4023
The *Spelling and Speed Reading Tutor* is useful to students in both primary grades (including infants) and high school. It has also proved to be a most effective way to teach remedial groups. Requirements: Apple II. Age of 5+. Skill: Novice. Price: $60.

SCHOOL RECORDS AND REPORTS
Lothlorien Software
GPO Box 1033
Sydney, NSW 2001
(02) 389 4023
School Records and Reports is a program written specifically to keep track of each student's progress throughout the year in up to nine different subjects. Marks for six tests can be recorded, in each of these nine subjects. Each diskette can record the reports for 215 students. Requirements: Apple II. Skill: Novice. Price: $150.

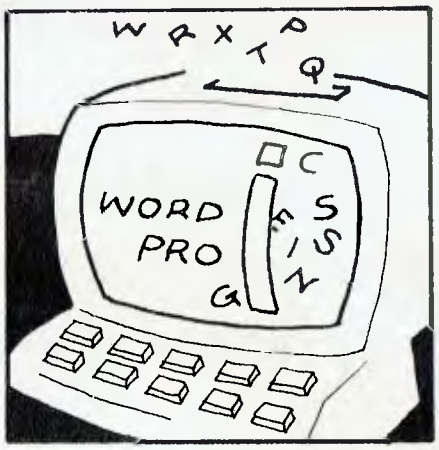
Word processing

WORDPLUS PC/THE BOSS
SCA Software
449 Swanston St
Melbourne, Vic, 3000
(03) 347 7011
Wordplus is designed for high-quality correspondence. It includes a spelling checker, cut and paste, and mail merge. On the NEC 3550, it gives true proportional spacing. *Wordplus* permits the construction of scientific and foreign language character sets. It will read material from most popular database and spreadsheet programmes. Requirements: PC/DOS MS/DOS. 192 RAM. 1 disk drive. Skill: Novice. Price: $425.

IBM-PC COMPUTER WRITING ASSISTANT
IBM Australia
168 Kent St
Sydney, NSW 2001
(02) 234 5678
Writing Assistant is a versatile word processing program that includes the IBM Personal Computer *Word Proof* spelling verification aid. Requirements: PC, XT, PCJnr, 128K, double-sided disc drive. Skill: Novice. Price: TBA.

MICROSOFT WORD FOR MAC
Microsoft
PO Box 98
Terrey Hills, NSW 2084
(02) 450 2522
Microsoft Word uses the graphics capabilities of the Apple Macintosh to allow full visual representation of the text and graphics on the screen, including proportional spacing and support for Macintosh's fonts. *Word* makes full use of Macintosh's menus. Moving and copying portions of text, including moving text between documents, is accomplished with the standard Macintosh edit functions of cut, copy and paste. Requirements: Apple MAC. Skill: Novice. Price: $315.

EASYSCRIPT
Commodore Computer
5 Orion Rd,



Lane Cove, NSW 2066
(02) 427 4888
This wordprocessing package lets you create, modify, and print text quickly and easily. Text can be stored on disk or cassette. Requirements: Commodore 64. Skill: Novice. Price: $180.

MULTIMATE 3.21
SCA Software
449 Swanston St
Melbourne, Vic 3000
(03) 347 7011
An 83,000 word Australian/British dictionary has now been added to *Multimate* in the latest revision. Version 3.21 of *Multimate* which is now being shipped to dealers, contains a number of other improvements. It now supports more than 50 printers including Epson, NEC, Toshiba P1350, Daisywriter, Diablo and Brother, and makes even more extensive use of the sophisticated facilities offered by many printers. The spellcheck function in *Multimate* breaks words down according to their phonetic structure. Skill level: Intermediate. Requirements: PC/DOS, MS/DOS, 128K. Price: $385, or version update for $69.50 to registered users.

NEVADA EDIT
Arcom Pacific
P O Box 13
Clayfield, Qld 4011
(07) 52 3862
Nevada EDIT is a text editor program for use with CP/M-80. The user may edit existing files or create new ones. Single characters, strings or entire lines may be inserted, deleted or moved from one part of the file to another. Text may be scrolled forwards or backwards within a file. The user can search for a character string and substitute this for a new string. Price includes diskette and manual. Requirements: CP/M-80 with 32K RAM. Skill: Novice. Price: $59.95.

EASYSPELL
Commodore Computer
5 Orion Rd
Lane Cove, NSW 2066
(02) 427 4888
Easyspell is a spelling checker for files produced by the Easy Script word processing package, and will only work in conjunction with *Easyscript*. It can be used to check text in individual *Easyscript* files or text that is spread over files that have been linked together. The *Easyspell* package comes with a dictionary diskette. Approximately 20,000 words are supplied on an *Easyspell* dictionary diskette. Requirements: Commodore 64. Disc system. Skill: Novice. Price: $80.

SPELLBINDER
Software Source
344-348 Oxford St
Woollahra, NSW 2025
(02) 389 6388
More than a word processor, *Spellbinder* gives complete office management capabilities. It processes forms as easily as it processes words, and provides automated mailing. Proportional spacing ensures a good-looking document, and a built-in calculator does maths for you. *Spellbinder* does these things faster than other packages because it is written in assembly language. It has cut and paste and automatic reformats after corrections. *Spellstar* also lets you customize your work with special features or programs to suit your needs. It will work with database management systems and with most accounting and spreadsheet packages. Requirements: MS/DOS, PC/DOS, C/PM 80-86. Skill: Novice. Price: $695.

AUSTRALIAN GEOGRAPHY TUTOR
Lothlorien Software
GPO Box 1033
Sydney, NSW 2001
(02) 389 4023
The *Australian Geography Tutor* is a map orientated program designed to present material to students to test their knowledge of newly presented material and to provide a merged listing to revise all material presented. Requirements: Apple II, games paddle. Skill: Novice. Price: $75.

FRENCH TUTOR/GERMAN TUTOR
Lothlorien Software
GPO Box 1033
Sydney, NSW 2001
(02) 389 4023
The *French Tutor* and *German Tutor* provide an excellent medium for the presentation of new vocabulary, and the drill and revision of old lists of words. Requirements: Apple II. Skill: Novice. Price: $75 each.

BASIC ARITHMETIC AND ALGEBRA
Computer Tutor
5/191 Victoria Road
Gladesville, NSW 2111
(02) 816 3178
Basic Arithmetic and Algebra is the first in a proposed series of programs based on the New South Wales Higher School Certificate Mathematics Two-Unit Syllabus. The program is not "drill and practice" but rather a tutorial program which can be used with minimal supervision. Requirements: Commodore 64. Age of 12+. Price: one user: $69.95.

LIBRARY CATALOGUE
Lothlorien Software
GPO Box 1033
Sydney, NSW 2001
(02) 389 4023
The *Library Catalogue* provides a means of keeping a complete and up to date listing of all material in the library. The entry of new material to the files is very simple and fast. Requirements: Apple II. Skill: Novice. Price: $150.

LIBRARIAN'S ASSISTANT
Lothlorien Software
GPO Box 1033
Sydney, NSW 2001
(02) 389 4023
The *Librarian's Assistant* – Loan System – and the *Library Catalogue* are two programs written to make life easy for the librarian of relatively small libraries. They are ideally suited for schools, small firms where technical information has to be held for staff etc. Requirements: Apple II. Skill: Novice. Price: $150.

Job specific

CLASS V.3
Computer Software Services
York St
Sydney, NSW 2000
(02) 241 1434
This new version incorporates several major enhancements, some of them designed in response to comments from current users of CLASS. These include expansion in the storage capability of a floppy-disk-based system from 150 to 500 clients a disk. CLASS is a specialised software system developed to reduce the administrative workloads of life agents and is marketed direct to agents as well as to life offices. Requirements: PC/DOS. Skill: Novice. Price: $3,500. Multiuser prices on application.

TBS NEWSPACK
Mitsui Computers
15A Maroochdore Rd
Kunda Park, Bundarim 4556
(071) 45 3017
Developed by Queensland software firm TBS Business Systems, *NewsPack* is a debtors/delivery system which improves productivity by reducing the time spent controlling accounts and producing drop lists and statements. The TBS *NewsPack* system has been installed in a number of Queensland newsagents in both country and city. Requirements: Mitsui SORD M23. Skill: Novice. Price: $7,500-$11,356 (includes hardware).

Languages

MICROSOFT BASIC FOR MAC
Microsoft
PO Box 98
Terrey Hills, NSW 2084
(02) 450 2522
Microsoft Basic for Mac takes full advantage of the large direct addressing capability of the Macintosh's Motorola 68000 microprocessor, including a decimal math pack with 14-digit precision, and string variables and string expressions of up to 32,767 characters each. It is source code compatible with all standard versions of *Microsoft Basic*, allowing for easy migration of programs written in *Microsoft Basic* to the Macintosh. Requirements: Apple Mac. Skill: Novice. Price: $245.

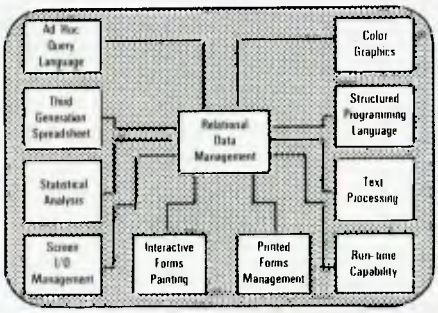
MICROSOFT FORTRAN UPDATE
Microsoft
PO Box 98
Terrey Hills, NSW 2084
(02) 450 2522
The latest release of *Microsoft FORTRAN* includes new floating-point, MS/DOS 2.0 file and overlay linking options. A number of other enhancements have been made, including support for large arrays. Arrays and common blocks may now exceed 64K bytes, allowing the programmer to manipulate extremely large matrices. Requirements: MS/DOS. Skill: Technical. Price: $544.

Knowledge Manager: The software that keeps on growing . . .

KNOWLEDGE man™

KnowledgeMan is a trademark of Micro Data Base Systems, Inc.; SQL/DS of IBM.

For people who just can't get enough of a good thing



Features*	Advantages*	Benefits*
Unlimited number of tables open at a given time	No need to open and close tables repeatedly	Speedier answers to your queries
Up to 255 fields per record	Greater descriptive capacity	Lowers frustration of having to deal with multiple tables for a single topic
Passwords, read/write access, data encryption	Access to data is individualized	Unauthorized use of data prevented
Query multiple tables with a single command	Retrieves data without unnecessary intermediate steps	Users get information more efficiently
Query syntax like IBM's SQL/DS	English-like commands	Users not required to learn a new language
Dynamic sorting and grouping of query output	Control of output format	Data can be customized to users needs
Spreadsheet cells may be defined in terms of • formulas • data table values • programs	Cell can automatically retrieve information from tables and can perform intricate mathematical operations on that information	No need to rekey information or perform calculations separately
Forms creation for screen and printer using 8 colors, blinking, bell, prompts, reverse video, etc.	Greater versatility in screen and printed output	Screens and forms are easy to understand and use
Statistics (e.g., min, max, average, sum, standard deviation, variance, etc.) automatically generated	Provides more complete analytical description of data	Improved decision-making capabilities
High resolution color graphics: pie charts, bar charts, area curves, scatter diagrams, etc.	Numerical data from spreadsheets and tables can be pictorialized	Patterns and trends easier to spot

*Partial List

We help a lot of different people solve a lot of different problems: from the simplest to the most complex. . . from mailing lists to integrated accounting, from preparing tax returns to order entry. Whether you need help saving money or making it, the Knowledge Manager can help you manage your information better than any other micro software package.

Quality Software for Quality Results

You can start just as simply as you want and grow just as fast as you like. The Knowledge Manager's powerful commands are always ready when you are. You get quick results, improved productivity, accurate information, custom tailored to meet your needs. The Knowledge Manager lets you use your information, when you want it and in the way you want it.

Reliable and Comprehensive

The Knowledge Manager is built to last. You can start with the Beginner's Guide, or run right through the instruction manual to advanced data management commands.

Whether your needs are simple. . . intricate. . . or somewhere in between

Chances are you won't find a job the Knowledge Manager can't do.

Dealer inquiries invited.

For Further Information contact:

DATABASE MANAGEMENT SERVICES
Box 62, Brighton, Vic 3186
Telephone: (03) 523 5947

FORMERLY TRADING AS MICRO DATA BASE SYSTEMS

Financial

IFPS/PERSONAL
Execucom
Suite 3, 98 Alfred St
Milsons Point, NSW 2061
(02) 922 2400
IFPS is a financial modelling language designed to help managers with budget analysis, project evaluation, resource planning, corporate consolidations, cash management and portfolio analysis and market and product planning. *IFPS* provides integrated graphics. The PC version will communicate with the mainframe version. Requirements: PC/DOS, MS/DOS, 512 K. XT and 8087 preferred. Coms board for connection with MF version. Graphics printer and monitor required for integrated graphics use. Skill: Intermediate. Price $2,000, with reductions for quantity.

Accounting

BILLING/INVOICING (APPLE IIe)
Surfway Software
PO Box 61
Sussex Inlet, NSW 2540
(044) 41 2679
The *Billing/Invoicing system* combines an accounts receivable system with added sales analysis. The system does not need to be used with a full inventory system. A smaller file of invoice items may be held from which month to date and year to date sales information can be extracted for reporting. The system is simple to use and designed for the first-time user. Statements and invoices can be produced as well as an aged trial balance. Requirements: Apple IIe with 2 drives, 80 column printer. Capacity on 2 drives. 300 customers, 200 invoice items and 800 transactions per month. Price: $350.

COMPACT ACCOUNTING COLOUR
Compact Software
20-22 Hargrave St
East Sydney, NSW 2010
(02) 357 5166
This update lets users with colour monitors run *Compact Accounting* in color. Other new features include an Australian-designed training module, a new file-handler, password protection, improved BASIC interpreter, and easier-to-understand manuals, with screen layouts and glossary. Highlighted are special discounts, cash payments, and credit notes. Messages may be flashed or reversed. *Compact* provides general ledger, accounts payable, accounts receivable, inventory control, payroll, and order processing and invoicing, in open item or balance forward formats. Requirements: 64K, CPM, CPM 86 PC/DOS, MS/DOS, configurable for most systems. Skill: Intermediate for non-accountants. Price: $600 per module or 4 modules for $2,160, 5 for $2,580, and 6 for $3000.

PAYWELL
TNT
28 Foveaux St
Surry Hills, NSW 2010
(02) 212 2900
Paywell organizes smooth payment and pay document distribution, while full control reporting helps payroll balancing and auditing. You can produce your own pay envelopes, company cheques, or bank credits on your printer, in your pay office. *Paywell* for example, provides selective employee processing, calculates taxation, specifies calendar periods, processes superannuation details, and gives payslip options to meet user specifications. Requirements: CMP MPM or MS/DOS 64K. 10MS drive. Skill: Novice: Price: 28 cents per employee per pay period.

VISION CASHBOOK
Vision 80
PO Box 1023
Burwood, NSW 2134
(02) 745 1888
Vision Cashbook is a cheque account control system. It makes a record of all account disbursement and reconciliation activities and provides instant reports of current cash position, bank statement reconciliation and details of income and expenditure accounts. 400 entries can be stored on one disc, and 100 disbursement accounts. Requirements: Apple II, IIe, 48K, one disk drive, 80 col printer. Skill: Novice. Price: $145 ex Tax.

TAXPREP
Bayside Computers
PO Box 647
Frankston, Vic 3199
(03) 781 4011
(03) 267 6066
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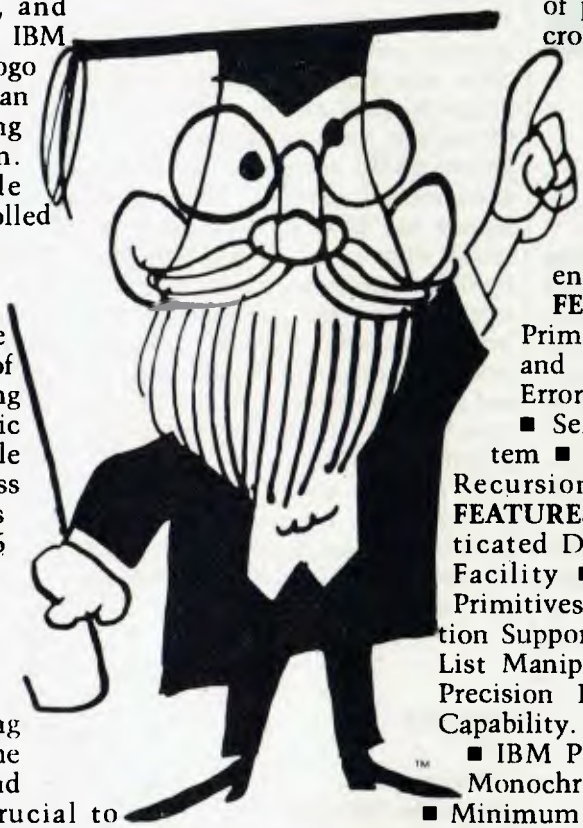
Meet Dr. Logo™

Dr. Logo for the IBM® PC is an advanced version of the popular Logo programming language. This is a language you can use in business, education, and home environments on your IBM PC. The true beauty of Dr. Logo is its simplicity. Beginners can sit down and start programming during their initial session. **Dr. Logo** includes "turtle graphics". A computer controlled "turtle" appears on the screen and responds to commands that make it move forward and rotate left and right. As the turtle moves, it leaves a trail of color in one of four colors. Using the IBM PC as an electronic sketchpad, you can type simple commands to create an endless array of images. Dr. Logo takes advantage of the IBM PC's 16 bit 8088 microprocessor by supporting up to 256K bytes of RAM. Digital Research has included features in Dr. Logo which make it suitable for sophisticated programming projects. Dr. Logo allows the user to include comments and indentation procedures—crucial to structured programming. An advanced two-window debugger and two different trace modes are useful for tracking down errors in complex programs. Workspace management primitives help to manage the expanded memory supported by Dr. Logo. These include the ability to change the order of procedures in the workspace, cross reference procedures, and remove comments. Dr. Logo supports double precision floating point mathematics including a full set of transcendental functions, logarithms, and their inverses making Dr. Logo ideal for scientists, engineers, and students.



FEATURES ■ Turtle Graphics Primitives ■ Uses IBM Function and Arrow Keys ■ Informative Error Messages ■ Game Primitives ■ Self Contained Operating System ■ List Processing Primitives ■ Recursion Supported. **ADVANCED FEATURES** ■ Large Workspace ■ Sophisticated Debugging Facilities ■ Help Facility ■ Workspace Management Primitives ■ Comments and Indentation Supported in Procedures ■ Property List Manipulation Primitives ■ Double Precision Floating Point Mathematics Capability. **SYSTEM REQUIREMENTS** ■ IBM PC with 192K-256K RAM ■ Monochrome or color graphics display ■ Minimum one floppy disk drive ■ IBM Color Graphics Display Adapter ■ (Optional) IBM Monochrome Display Adapter and IBM Monochrome Display.

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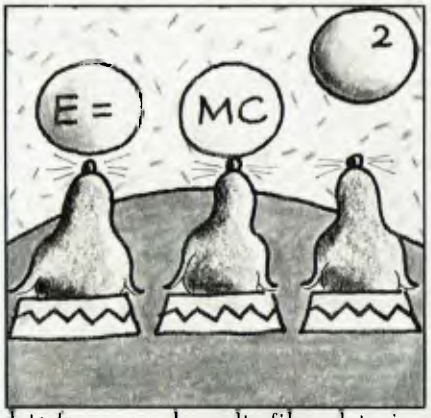
formation needs and includes formats for handling payrolls, invoices, inventory, personnel information and a general ledger. This is a template for the Assistant series. (See integrated listing). Requirements: 128K double sided disk drive. PC, XT, PCjr. Skill: Novice. Price: TBA.

MICROMODELLER
Intelligence
204 Clarence St
Sydney, NSW 2000
(02) 267 1711
(03) 51 1406
MicroModeller is an easy-to-use business planning, control and reporting tool, the equal of which was previously found only on mainframe computers and inexpensive time-sharing bureaux. Functions include: Text editor, for creation and maintenance of data files, programs, report specifications, and automated run files; report generation; automated run files; links to other systems; pre-programmed functions (eg, NPV IRR); consolidation and extraction of



data from saved results files; dataview, to view results of calculations on screen and to dynamically change data (what if analysis). Requirements: 64K, 128K, CP/M, CP/M 86 or MS/DOS. Skill: Intermediate. Price: $1,200.

BOOKKEEPER
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Bookkeeper will keep track of all cash flows, from managing a block of flats or investments to running a business, even to home budgets. In fact if a cheque book is used then *Bookkeeper* can be useful. *Bookkeeper* relieves you of the laborious task of writing up cash books and keeping ledgers, and also ensures accuracy. For small businesses, *Bookkeeper* fills the gap between unsophisticated programmes and high-priced general ledger systems. Requirements: Apple, IBM, DEC. Skill: Novice. Price: $350.

IBM-PC EXECUTIVE SOLUTIONS
IBM Australia
168 Kent St
Sydney, NSW 2001
(02) 234 5678
Executive Solutions is geared to business professionals and includes formats for maintaining a diskette library, a mailing list, a stock portfolio and checking accounts. This is a template for the IBM *Assistant* series. Requirements: 128K, double sided disk drive. PC, XT, PCjr. Skill: Novice. Price: TBA.

Spreadsheets

MULTIPLAN V.1.07 FOR APPLE II
Microsoft
PO Box 98
Terrey Hills, NSW 2084
(02) 450 2522
This version of *Multiplan (1.07)* includes new features that tailor the package to the Apple II home user. Included on the program disk are two templates, or pre-designed worksheets, that introduce users to loan analysis and home budgeting with *Multiplan*. It works on the Apple II, II Plus, and IIe in addition to the Apple IIc. Requirements: Most personal computers. Skill: Intermediate. Price: $395. Upgrades from 1.06 available by calling Microsoft on (02) 27 3571. Upgrade: $25.

MS/DOS MULTIPLAN V.1.2
Microsoft
PO Box 98
Terrey Hills, NSW 2084
(02) 450 2522
MS/DOS Multiplan offers three major enhancements over *Multiplan 1.10*. The first is the expanded financial functions of *1.2*, specifically the Modified Rate of Return (MIRR). MIRR allows the user to explicitly specify the re-investment rate of iterim cash flows of an investment. As well as the expanded financial functions of *1.2*, Multiplan can now be run in colour on the IBM-PC and PCjr. Requirements: MS/DOS. Skill: Intermediate. Price: $395. For users with *1.06* the update is $50. For those with *Multiplan 1.10*, the update will cost $25. The retail price of *Multiplan 1.2* is $395.

THE IBM-PC PLANNING ASSISTANT
IBM Australia
168 Kent St
Sydney, NSW 2001
(02) 234 5678

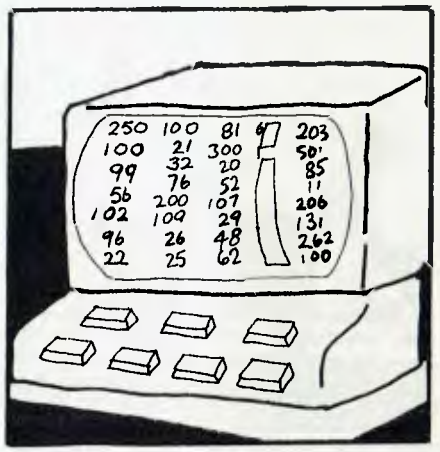
Planning Assistant is a spreadsheet program that helps professionals with budgeting, planning, forecasting and financial analysis. Requirements: PC, XT, PCjr, 128K, double sided disk drive. Skills: Novice. Price: TBA.

MICROSOFT MULTIPLAN FOR MAC
Microsoft
PO Box 98
Terrey Hills, NSW 2084
(02) 450 2522
Microsoft Multiplan for the Mac provides all the features of other versions of *Multiplan*, with additional enhancements. An "undo" command allows reversal of the last change to the spreadsheet. Recalculation is faster on the Macintosh, and "smarter" – recalculation will pause so the user experiences no delay while working. Requirements: Apple MAC. Skill: Intermediate. Price: $315.

SUPERCALC2 FOR APRICOT
Barson Computers
335 Johnston St
Abbotsford, Vic 3067
(03) 419 3033
The *SuperCalc2* program turns your Apricot into a powerful electronic spreadsheet. With *SuperCalc2* you can lay out your spreadsheet in a convenient manner, and perform any type of spreadsheet calculation that you once did with a paper and pencil. You can supply heading and text material without affecting the calculations, and consolidate spreadsheets, as well as print professional-looking reports. You can include the report information in other documents. Requirements: Standard Apricot. Skill: Intermediate. Price: $399. (SuperCalc is included with Apricot purchase.)

SUPERCALC3
Arcom Pacific
PO Box 13
Clayfield, Qld 4011
(07) 52 3862
SuperCalc 3, from Sorcim, is the latest addition to Sorcim's family of spreadsheets. It adds fully integrated presentation-quality graphics and a date management capability to the already advanced features of *SuperCalc2*. Access to the graphics of *SuperCalc3* is simple: just a single keystroke to view, print or plot. The graphic capabilities are contained within the system. For example, a name in a telephone directory list. Requirements: IBM-PC, PC/XT, and some compatibles. Minimum 96k uses memory. Neither colour nor graphics compulsory, although recommended. Skill level: Novice. Price: $445.

CALC-RESULT
Commodore Business Machines
5 Orion Rd
Lane Cove, NSW 2066
(02) 427 4888
If your work involves financial management, planning or forecasting, then *Calc-Result* can turn your '64 into the most powerful decision-making tool at your disposal. It is equally suited to simpler jobs like managing a home budget. Thinking of adding an extra salesman? *Calc-Result* can show you what it will cost you and what you may expect in re-



turn. What if sales tax goes up by another 5%? *Calc-Result* can immediately re-vamp your sales figures. And for the man on the land, *Calc-Result* is an ideal way to manage your primary production. Questions like WHAT IF feed prices go up 13%? Requirements: Commodore 64, or Commodore Executive. Skill: Novice. Price: Advanced, $200; easy $100.

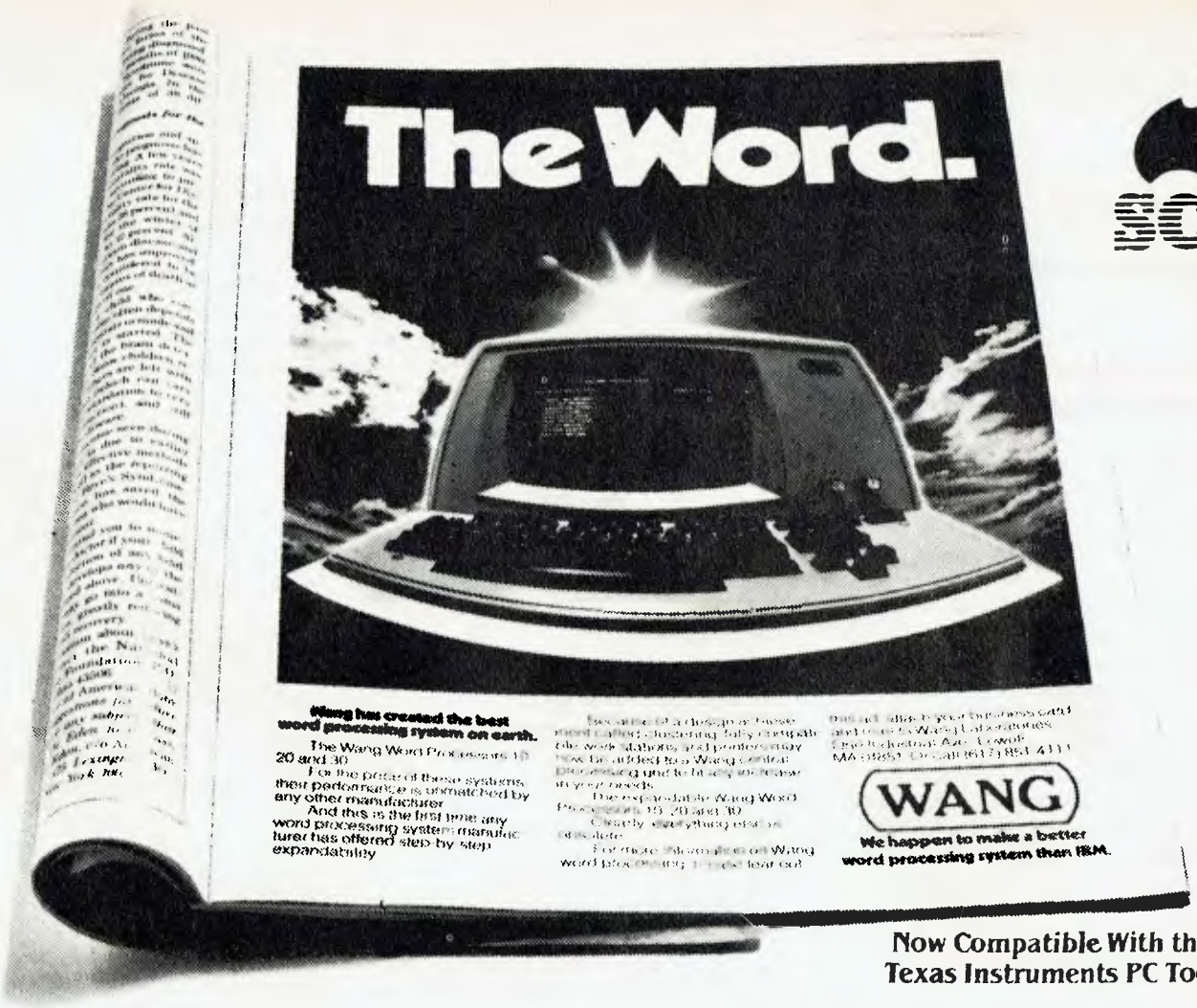
SUPERCALC
Software Source Pty Ltd
PO Box 311
Bondi Junction, NSW 2022
(02) 389 6388
A superior spreadsheet for CP/M. Numbers and text can be examined and altered within a grid that can hold up to 63 columns and 254 rows of data. Accountants, planners, engineers, and business owners have found SuperCalc invaluable for day-to-day "what if" questions, as well as "now what?" for those times when the unexpected occurs. Requirements: CP/M-80. Skill: Novice. Price: $349.

Project management

MILESTONE
Software Source Pty Ltd
PO Box 311
Bondi Junction, NSW 2022
(02) 389 6388
This is a critical path network analysis program for scheduling manpower, dollars and time to maximise productivity. An interactive project management program that runs on your micro and can relate together different skills, hourly pay rates and projects to maximise efficiency. MILESTONE could be used to track paper flow, build a computer, check a salesman's performance, or build a bridge. MILESTONE can be used by executives, engineers, managers and small businessmen. Requirements: PC/DOS, MS/DOS, CP/M-86 or CP/M-80. Skill: Novice. Price: $525.

Statistics

STATPAK
Software Source Pty Ltd
PO Box 311
Bondi Junction, NSW 2022
(02) 389 6388
This is a professional statistics and probability calculation library of programs for the analyst to manipulate and handle data in almost every conceivable manner including capabilities found in large time-share systems. Utilities provided can rapidly and easily handle large numbers of data items, expedite file creation, provide file editing and merging, and select data subsets and data scaling. Requirements: PC/DOS, MS/DOS, CP/M-86 or CP/M-80 + MicroSoft Basic. Skill: Statisticians, students. Price: $695.



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muLISP
Software Source Pty Ltd
PO Box 311
Bondi Junction, NSW 2022
(02) 389 6388
An implementation of LISP programming language suitable for artificial intelligence applications. Applicative, recursive, language ideal for describing complex mathematical concepts. Provides interactive environment for human machine communication. Includes MuSTAR-80 Development System with display-orientated resident editor. Requirements: CP/M-80. Skill: Novice. Price: $310.

muSIMP/muMATH
Software Source Pty Ltd
PO Box 311
Bondi Junction, NSW 2022
(02) 389 6388
This is a package of programs including: a high-level programing language suitable for symbolic and semi-numeric processing (muSIMP); and a language interactive symbolic math system (muMATH) written in muSIMP that performs sophisticated mathematical functions, and matrix operations on arrays. Requirements: CP/M-80. Skill: Novice. Price: $390.

MACRO-80
Software Source Pty Ltd
PO Box 311
Bondi Junction, NSW 2022
(02) 389 6388
This is a 8080/Z80 relocatable macro-assembler supporting Intel and Zilog mnemonics. Includes assembler, linking loader, cross reference facility, and library manager. Supports Intel standard macro facility, including IRP, IRPC, REPEAT, local variables and EXITM. Requirements: CP/M-80. Skill: Novice. Price: $329.

Word processing

PUNCTUATION & STYLE
Software Source Pty Ltd
PO Box 311
Bondi Junction, NSW 2022
(02) 389 6388
This is a combination of 2 extremely clever programs developed to check written text for grammatical errors, as well as having the capability to improve commonly misused phrases. Used with a word processing system such as Spellbinder, Perfect Writer, Wordstar etc, it will greatly increase the production and accuracy of documents and letters. Requirements: PC/DOS, MS/DOS, or CP/M-80. Skill: Novice. Price: $239.

THE WORD PLUS
Software Source Pty Ltd
PO Box 311
Bondi Junction, NSW 2022
(02) 389 6388
The Word Plus is a powerful, flexible and integrated series of tools designed to carry out word correction and a series of other dictionary-based tasks as efficiently as possible. It shows errors in context, aids the user in finding the correct spelling (by showing likely correct words from the dictionary on the screen) and then automatically making the chosen corrections throughout the document. Requirements: PC/DOS, MS/DOS, CP/M-86 or CP/M-80. Skill: Novice. Price: $249.

SPELLBINDER
Software Source Pty Ltd
PO Box 311
Bondi Junction, NSW 2022
(02) 389 6388
Spellbinder is a full-feature word processing system with office management capabilities. Its special features include an easy-to-read manual, specifically designed for novice office personnel and several levels of on-screen help. Terminal functions keys allow one-keystroke operation eliminating control codes altogether. Some other standard features are: Automatic word wrap; full cursor movement; horizontal scrolling; forms creation and fill-in; paragraph merging; database management; alphabetical or numerological sorting; mail list maintenance etc. Requirements: MS/DOS or PC/DOS or CP/M-86 or CP/M-80 or OASIS. Skill: Novice. Price: $795.

Graphics

EXECUTIVE PICTURE SHOW
Software Source Pty Ltd
PO Box 311
Bondi Junction, NSW 2022
(02) 389 6388
What Lotus 1-2-3 has done for spreadsheets, Executive Picture Show is doing for graphics. Ordinary business graphics programs are fine as far as they go. But they are hardly the stuff of interesting business presentations. If you need the ability to integrate and modify screens from other programs, such as Lotus 1-2-3, dBASE II etc, or just give free rein to your artistic side with free-form drawings, you've probably been frustrated on both counts. Now there is a business graphics system that gives you these capabilities plus the usual line, bar, 3D bar, horizontal bar and surface pie charts. Requirements: PC/DOS, 128K RAM, IBM-PC (or XT), 2 drives, graphics adapter or display. Skill: Novice. Price: $329.

From page 120

Here's where UNIX comes in, and this is why the current mutterings and rumblings throughout the computer industry point to the evolution of UNIX as the future operating system for multi-user systems.

UNIX is a multi-user operating system. Up until now it's been boffin territory. If you see someone striding around campus in thongs, shorts, and a long beard, he's probably a UNIX buff. UNIX is a mini computer operating system, now filtering down to personal computers – the newer ones that have the power of a mini.

UNIX supports multi-tasking, as well as multiple terminals connected to a single system. It's well established among university and technical users and is beginning to look unstoppable with IBM.

MS/DOS creator, Microsoft, and CP/M creator, Digital Research, all now appear to accept UNIX as the main multi-user contender for the future.

Other benefits

Other benefits of UNIX are that it's got lots of useful tools in it for programmers, and the software is very portable – which means it will run on many operating systems.

Against UNIX is the fact that it's a new idea, and not many applications programs are around yet although all over Australia, back rooms buzz with UNIX program development. Current incarnations also suffer from a lack of data security and slow file transfer. Also it's written for technical people, but new versions, like UNIX 7, can be learned by people with no previous computer experience given the right documentation.

Xenix, as Microsoft is quick to point out, is by far the most popular version of UNIX on personal computers. But IBM instead chose to commission Interactive Systems Corp of California to modify its version of AT&T's Uni System 3 for use on the PC. IBM has since recommended a minimum of 256K main memory, "ideally 512K", and 10Mb of fixed disk for its new PC/IX. This is a single user system.

AT&T has ready to go a UNIX product called PC Interface, a networking product that links IBM-PC's to a microserver.

A Bricks And Mortar Case

The purpose behind installing a small computer recently at $50 million a year builder KB Hutcherson is to bolster the efficiency of internal administration.

Multiplan packaged software is being used for estimating and processing claims at the Sydney-based operation, according to director, Max Player.

Player says that some staff need to become more familiar with the new facility, based around four Burroughs B20s systems. It's no secret that Hutcherson had little joy from its previous system.

The start-up, says Player, parallels "some movement and indications" of an upturn in the commercial building sector. He says this region traditionally follows housing activity, which he says "has already begun to look better".

Hutcherson's building jobs read like a Who's Who of key Sydney buildings.

Its projects include Pier One, The Village Cinema Complex, the Seymour Centre and Broughton House – the first major central city recycling project. KB Hutcherson is constructing the $40 million extensions to Royal Prince Alfred Hospital.

"The contracting environment is a very specialised field, it has complexities which do not exist in any other industry," says Player.

KB Hutcherson evaluated several systems and narrowed the field to three suppliers, including Burroughs, who won, because of "flexibility" and the "proven capabilities" of their software especially designed for the building contracting industry, called CONACS.

Four B20 computer systems combined with CONACS are now installed at the Milson's Point, New South Wales, head office of KB Hutcherson. The company plans to link up the Sydney system with a smaller B20 CONACS system in its Gold Coast office.

Jana Pearce is a Sydney-based hi-tech consultant.

PCs STOLE HER HUSBAND

I have a confession to make. I honestly do not know the first thing about computers.

Here we are in 1984 and I do not know a diskette from a disco or Fortran from Fortrel. I do not own a home computer nor do I have access to one at work.

What's more, I have it from authoritative and reliable sources, I am only one of thousands. We, the computerless minority, are a forgotten lot, spurned and neglected under the irresistable reign of high-tech.

My husband is now in full-time service for the cause. Once a sollcitor with whom I had much in common, he now spends every waking hour either in front of computer screens or behind computer magazines.

Our neighbor, a former doctor, underwent a similar career change operation and now leads the life of a computer hardware retailer. His wife and I sometimes sit and reminisce about those pre-computer days when our spouses still knew who the prime minister was, remembered their kids' birthdays and came home for dinner before the late, late show.

To help one while away the long nights with his cold meat and potatoes at my side I wish I had something good to read. But the newsagents' shelves are overflowing with "Today's Computers",

Frimet Roth

"Computer Digest", "The Programmer's Weekly", "Byte Beautiful" and "Ladies' Home Data". Even a gripping paper-back novel is hard to find. Leafing through the "M's" in my telephone directory gives me bigger thrills.

Cannot understand

My kids cannot understand my craving for books. The computers at school have been doing a fine job of teaching them how to read, write, add and subtract, so what's all the fuss about?

I put up a fight. I used to take them to the local library regularly and march them up and down the aisles just to remind them what good literature looks like – until the council put back the hours for lack of public interest.

Now I'm working on toys. Every now and then I gather them around me in the lounge room and describe, as vividly as I can, the teddy bears, Lego sets and matchbox cars that used to line the store shelves before computer games took over. They're intrigued, they admit, but still suspect that I'm inventing it all.

"Watch TV", they suggested, "you'll stop day-dreaming so much about ancient history." So I did. For a while, that is. Until high-tech infiltrated that domain as well. Those BBC computer instruction shows were aired at 10.30 pm, my favorite viewing time and the last retreat had been captured.

I very nearly called my local institute of technology to apply for a course last year when Time magazine appointed the computer its man of the year. But then a recent news item from the US gave me cause for hope.

It seems a bank there decided that only customers with accounts of more than $5,000 would be offered the option of human tellers. All others would be obliged to negotiate with computers.

Yet the poorer customers protested to the extent that the bank relented and allowed them the choice between man and machine. I decided then and there that some hope does remain for the return of civilisation as I once knew it.

By Frimet Roth, a Melbourne writer.

FRAMEWORK

Framework® is the first of a new generation of products that goes beyond today's integrated spreadsheets. It is an order of magnitude better than the original integrated products and windows.

The heart of Framework is a unique "frames" technology. Frames are actually self-contained, inter-related displays that can be nested, resized and relocated anywhere on the screen. Frames bring new flexibility to the way information is created and managed with a PC. With this truly three-dimensional design, the user can create infinite logical hierarchies of information, leading to as deep a level of complexity as needed for the task at hand. There is no limit to the number of frames that are active in the system. Framework's user interface is one of the most elegant designs yet conceived.

Word Processing

Framework's word processor is dynamite! It gives users the choice of frame or fullscreen viewing of documents, multiple margins within a single file, automatic justification and repagination, header/footers, page numbers and more. The streamlined menu system helps new users get started in a hurry and "shorthand" commands help veterans work even faster.

Outlining

The innovative and very powerful outline processor can be used as a standalone organizer or as a companion to the word processor. Using this outline mode, single ideas can be quickly captured and then expanded into fuller concepts and solutions. Any outline-frame or subheading within an outline can be instantly expanded to include text, spreadsheets, graphs or databases. Finally, with Framework, your PC is truly a thinking machine.

Database

Framework's database system can be learned quickly and put through its paces effortlessly because most commands are common throughout the entire program. Framework itself will handle most of your analytical information management needs, and if very large data handling is required, Framework is fully compatible with dBASE II®.

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FRAMEWORK™

Spreadsheet

Spreadsheets are simple to create, use traditional row/column or English-language cell addresses, can be linked to automatically update other files based on cell data and have an exclusive international numerics feature that will change entries to accurately reflect changes in currency denominations including the placement of commas and decimal points.

Graphics

The graphics portion of Framework has been designed to produce exceptional charts and graphs on standard monochrome monitors. Six of the most frequently used business graphs are built-in and can be automatically drawn and updated from data in spreadsheets and database files.

DOS Access

The new DOS access capability allows any user to actually run other PCDOS software inside Framework. This allows users to gather data from other programs without quitting Framework. It will be of great help to people who frequently shuttle between programs and to businesses who perform frequent interchange of programs or data with larger systems.

Custom Applications

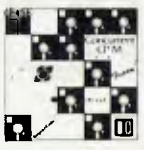
Framework comes complete with its own programming language. Users can begin writing their own custom packages or use software developers right away. In addition, dealers will continue to receive the excellent support that has helped make Ashton-Tate the front-runner in the software industry with dBASE II and FRIDAY!

Hardware

Framework will run on the IBM PC, PC XT and all compatibles. It requires just 256K RAM and dual 360Kb floppy disk drives with monochrome display.

Availability

Framework will be available in Australia from the end of July. Contact your dealer end-June for more details or write to the Master Distributor, ARCOM Pacific, Freepost 2 (no stamp required), P.O. Box 13, Clayfield, Qld. 4011.



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MULTIPLAN electronic spreadsheet 63 columns wide and 255 rows deep.
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UTILITIES: A comprehensive range of support tools designed especially for the **microbee 128K**.

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Wordstar training guide. Microsoft Multiplan manual and the Microsoft BASIC manual.
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microbee 128K Small Business Computer

Standard Specifications:

PROCESSOR:
Z80A running at 3.375 MHZ

KEYBOARD:
60 key FULL SIZED QWERTY layout with full travel.

DISPLAY:
Direct video to external monitor.
80 by 24 and 64 by 16 character display modes, high resolution PCG graphics to 512 by 256 pixels. Upper and lower case with full programmability at any screen location.

INPUT/OUTPUT:
Programmable 8 bit input/output parallel port, programmable RS232 port, cassette interface, direct video, 50 way Z80 expansion bus.

MEMORY:
128K of dynamic RAM, 2K screen and graphics RAM, 8K of system firmware controlled with specially designed memory management unit.

128K **microbee** dual 400K slim line floppy disk drives; amber screen high resolution monitor; bundled software and manuals. **$2,245.**

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Going Walkabout With The Oz 816

The Australian-designed 816 is a truly portable computer complemented by an exhaustive range of software. All this for $3,555 (including tax) adds up to value for money.

Take an industry-standard personal computer, add an assortment of commonly-used business software, bundle it into a compact attaché case and you have the basic ingredients for the Executive 816 portable computer.

The recipe sounds familiar and in fact a number of personal computers (most notably the Osborne) owe their success to this very formula. My initial impression of the 816 would indicate that designer Ron Harris has also successfully followed this formula to come up with an Australian personal computer that is well packaged and price-competitive.

The basic hardware components of the 816 consist of a Z80A processing unit; a detachable keyboard; 2 disk drives; a 13cm (diagonal) green on black display device; and a Samsonite attaché case. So common is the Z80A family of processors and their related CP/M operating systems that the technical capabilities of the 816 could hardly be described as unique or superior to the great number of personal computers that are presently available.

However, for a machine of its size (approximately 46cms (W) × 34cms (L) × 15cms (H)) and price ($3,555), 2 strong features are evident. First, the dual floppy disk drives have an amazing 800K of storage per disk drive (being double sided and double density) which is about twice the capacity of an IBM-PC and more than 4 times that of an Apple IIe.

Clearly, the 816 has been designed with business requirements in mind where disk capacity is paramount.

While not being as comprehensive as say the IBM-PC or its clones, the 816 keyboard is extremely "workman-like" and unlike many of its more expensive competitors it has a very good feel to it when depressing the keys (this being very important when using word processing applications).

Obviously portability may have some detrimental side effects and of particular concern to me was the small size of the visual display unit. Being only 13 cms (diagonal) in dimension (an Osborne is 18cm) it becomes tiring to read the 80 × 24 character screen over a length of time. (I experienced difficulty after only half an hour!) To overcome this an outlet has been provided for connecting a 30cm (standard) display unit. I would consider this mandatory for business use.

Indeed, such a personal computer would blend into any professional office environment.

The standard software provided with the 816 is representative of the most commonly used business applications and includes, principally, general ledger; accounts receivable; accounts payable; stock control; an electronic spreadsheet; word processing; a data base package; and a systems utilities disk for performing housekeeping functions.

The manufacturer claims that such an array of software "would cost you $2,000 if bought separately". This I find to be an extremely conservative estimate, as the application packages provided are generally of a high quality.

The accounting packages represent the fully integrated (ie, information is automatically transferred from one package to the other) CP/M-based IMS accounting software. Such software is very popular and its relative merits have been well discussed elsewhere. From my brief review of the packages they appear to adequately complement the hardware capabilities of the 816 and would be of direct benefit to a small business.

The documentation provided with the 816 is definitely the weak link in an otherwise highly professional chain. The manuals provided could be presented in a more professional manner (say, loose-leaf format), and be written in a format that is more conducive to a first-time user, as it is this market where the majority of sales would more than likely be made.

In summary, the 816 is more innovative with respect to its marketing strategy than its technical merits. While the 816 is based on hardware that has been around for a considerable number of years, it has been well packaged to present a truly portable computer and complemented with an exhaustive amount of software.

All this for $3,555, including tax. If value for money is a prime consideration then the 816 deserves inspection.

Bruce Green is manager, personal computer advisory service, Peat Marwick Mitchell & Co., Sydney.

Newbury Data 8820 matrix printer

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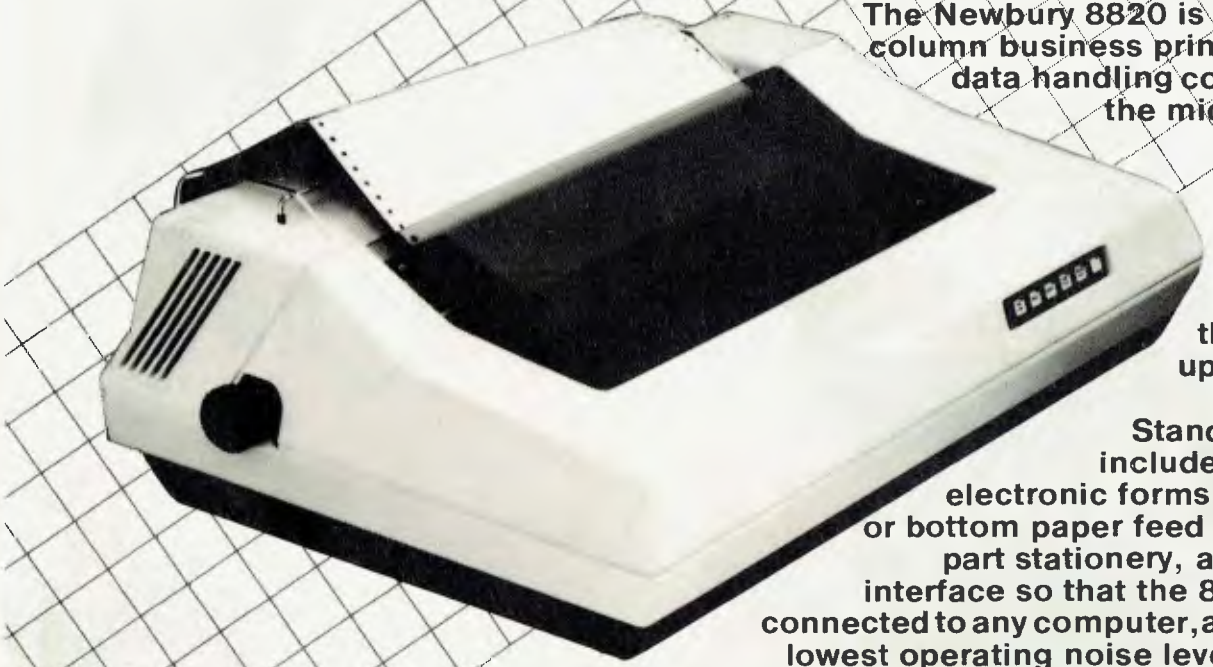

The Newbury 8820 is a robust 132 column business printer. Efficient data handling combined with the microprocessor control of printhead and paper motion results in an actual throughput of up to 400 lines per minute. Standard features include a 2K buffer, electronic forms control, rear or bottom paper feed for up to five part stationery, a three in one interface so that the 8820 is easily connected to any computer, and one of the lowest operating noise levels available. The 8820 printer dictates new standards and is backed by a warranty more than twice as long as its competition.

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DEALER ENQUIRIES INVITED

Apples On The Family Tree

When genealogy becomes family history the mountains of paper that accumulate can begin to seem like the Himalayas. An Apple II Plus has turned one historian's mountains into molehills.

Genealogy is a pain in the neck. I know, I was literally up to my neck in it.

For genealogy, at the level at which I work, involves masses of paper that has to be filed, searched and stored. Certificates of birth, death and marriage, photographs, shipping lists, correspondence, newspaper clippings, family trees and transcriptions from old Bibles were slowly taking over my home.

When genealogy became family history, those masses turned into mountains. I have turned my mountain into a molehill with a personal computer

Tracing our family history led me to a couple who had arrived in Australia in 1848 from France. As they were English-born, I was curious as to why they had

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been living in Calais for some years before migrating.

I was to find that the Stubbs family were only one of 300 or more families who fled France in the troubled days before the July revolution of 1848 to migrate en masse to NSW and South Australia. All these families had been employed in France in a thriving lace industry, established by lacemakers from Nottingham, in the later days of the 18th century.

I was not the only one researching the lacemakers of Calais. In Nottingham, Elizabeth Simpson, a noted British family historian, had commenced an investigation into the origins and history of the mass migration. She in turn had come across a genealogist in France who had spent a great deal of time transcribing the records of the English 'dentelliers' from the French registers.

Margaret Audin lives in Paris. She is English, married to a French citizen. Her records contain almost a complete listing of births, marriages and deaths of English residents in Calais from the latter days of the 18th century until the early 1900's.

Once contact between Elizabeth, Margaret and myself was established, it didn't take long to put together a list of people known to be researching families of lacemakers who had emigrated in 1848 and later.

Within 2 months of writing to Elizabeth I sent out a circular to 65 descendants of other laceworkers who replied enthusiastically and before too long we had formed the Society of the Lacemakers of Calais.

As research secretary and contact for our British and French connections the mountain of paper that was accumulating in my study began to look like Everest.

I seemed to be spending more and more time at the typewriter, bashing out replies to people who had asked me to search my files and even longer wading through the mountains of paper to find the information they needed. The answer came toward the end of 1982.

We computerized the files and the choice of computer was no problem to us. We needed a PC with the capabilities of handling a database, several languages including Pascal, Basic, Fortran, Logo and educational programs.

FROM THE 'WITNESS' FILE

Family name: Stubbs
Surname: Stubbs
Christian names: George S. O. William
Witnesses to Birth:
Date:
Witnesses to marriage: John Stubbs, Mary Preston
Date: 25/12/1824
Witnesses to death: Percy Gibson, James Macredie
Date: 12/6/1866
Comment: Death cert on file
Attachment: strongly feel that this George is definitely son of William Stubbs and Mary Mays who had three other children, William 1794, John 1798, Mary 1802. This couple had the birth of another son George recorded 8/1/1800 and the death of that child recorded 2/8/1802. Not unusual for child to be named for dead sibling. As John witnessed George's marriage in 1824 and George and Sarah witnessed John's marriage in 1833 I feel this establishes a definite relationship. Also John's son, born 8/4/1834 is named George, and John is a lacemaker at that time.

Family Name: Stubbs
Surname: Stubbs S. O. George & Sarah
Christian names: Henry
Witnesses to birth: Andrew Giles, 36, a lacemaker, Thomas Barrowcliff, 30, a publican
Date: 26/8/1847

I could not justify the cost of the computer to the family if it was only to be used for genealogy so it had to be of use to me as a teacher, to my husband as a student in a computer science degree and to the children. The Apple II Plus gave us all the options that we needed when coupled to a single disk drive and monitor.

I had completed a course in BASIC at the local TAFE, giving me a working knowledge of what buttons to press, but that was about it. Whatever I chose had to be very user-friendly.

Because the other factor was cost, I felt that a multi-purpose package would be more justified than a one-off, sole purpose program.

Several kinds of file were needed. One was a straight-out data form for each person and their descendants, needing to contain all information that we had found on places of birth, death and marriage, places of residence, spouse, descendants, occupations and so forth.

Then there was a form needed for shipping lists. For the majority of lacemakers we had little information beyond immigration details so a form was needed to the format of the shipping list along with a heading cross referencing each entry with members of the same family group.

Genealogy is like detective work, building a picture of a family piece by piece from very little and very obscure evidence which can easily be missed. In the early days of Australia it was not unusual for the spelling of names to change and remarriages could result in the "loss" of a particular person, particularly women, if the surname changed.

In the case of one particular ship, no shipping list or Immigration Board report was available and the only source of information was a report in the Adelaide Advertiser from 1848. A file containing such primary sources was a necessity.

Keith Stuart of Seahorse Computers, Camden, suggested that PFS File might be the way to set up the archives. Not only could it be used for that purpose but for data storage and retrieval.

User friendly and extremely versatile, PFS is produced by Infocom, at a cost of around $120. It can create a file to any format and once PFS has been loaded from the master disk, it is simply a matter of following the menu and the instructions to create a form.

Information can then be added, searched, altered, copied, transferred, deleted or printed either in whole or in part. The form itself can be altered without loss of information.

Deciding on the format was the hard part. It was important that the files be designed to give us available information about a particular person quickly and easily and also a broader view of the group. For example, how many of the group could read and write, how many were under a particular age, or over a particular age. PFS had that capability,

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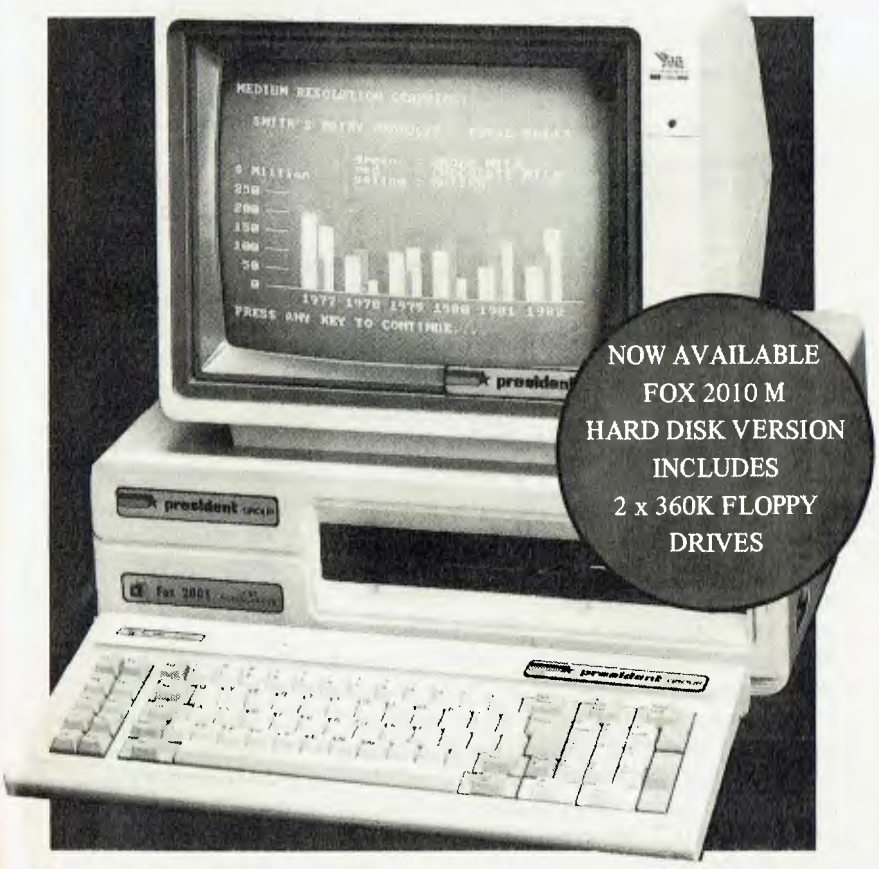

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provided the forms were set out in such a way as to allow its retrieval. After much trial and error we settled upon 4 files with which we were satisfied.

The first is a simple transcription of the Emigration Board's lists for all the ships that carried known lacemakers. The headings are those of the original documents. One heading has been added to allow cross-referencing to members of the same family.

The second is a personal file on the original immigrants and all their known descendants to the present generation. It includes provision for information about where they lived both in Australia and before emigration, known occupations, sources of information, political allegiances, education, religious affiliation and so on.

The third is a transcription of birth, death and marriage certificates from Australia, France and England. It is formatted according to the original certificate headings and contains names of witnesses and celebrants, places of baptism, marriage and burial, parents' names, children's names, etc.

The fourth transcripts newspaper reports and other primary sources that provide background to the mass migration or mention known lacemakers.

Before computerization, searching the files would have meant hours of poring over documents. It takes as little as a few seconds, at most 20 minutes.

PFS is loaded. The diskette for the shipping lists is inserted and the entry for search made. The blank form is displayed and in the appropriate places surname and name entered. Press control C. PFS searches the shipping lists and displays any form that is found in that name. If none are there, "Form Not Found" is displayed.

Not being on the shipping lists is not necessarily a negative response to "belonging". It may be a change of name and the Christian name can be searched. Total time so far, about 5 minutes. If the Christian name comes up and the clues seem to fit, such as matching age, origin, occupation, parents names, then the parents can be searched on the individual files or on the witness files. Total time thus far, 20 minutes.

Onerous task

Entering the information once it is found is perhaps the most onerous task.

AN ATROCIOUS speller can wreck the system with a misspelt word.

Right now I have some 1000 forms, sent to me by descendants of the lacemakers, that have to be entered. They will bring the file on one particular family up to date to the present day but there are some 50 other families who are sending me information and it too will have to be entered.

A word of warning. An atrocious speller can wreck the system by entering a misspelt word. It took me quite a few hours of work to rectify the problem when I found that according to the file no-one of a particular family lived in Canberra, although I knew they did. The name had been misspelt. A computer is only as good as its programmer or operator.

One problem I have now is the statistical analysis of the information. The time will come when I will want to look at mass migration as a whole, as opposed to the individuals; to look for patterns in origin, in the handing down of skills, in the movement of groups throughout Australia, in the impact of the emigrants upon Australian society, in patterns of settlement and so forth.

It will be in a lot of ways a number crunching exercise, and that PFS file will not do. When we chose PFS it was strictly as a database and now I feel I should have looked further. I believe PFS Report may do the job when linked to PFS File.

Still, researchers needed hard copy of my findings, so we added a printer.

Justifying the expense for genealogy was a bit hard on the family budget so we decided it had to be suitable for other purposes, such as replacing the typewriter.

I spend a lot of time at the typewriter. As a teacher and a children's author, when I'm not doing motherly things I'm usually writing university assignments, children's books or school administration work and the typewriter cops it.

It was already in need of fairly expensive repairs, so okay, we'd replace it with a printer and word processor. As publishers seem to hate dot matrix printers (they say it makes their readers' eyes ache) then it had to be a letter-quality printer. We settled on a Brother HR15 printer and Zardax word processor and they gave me value for money and the quality that I needed.

Zardax, produced by Computer Solutions, is a powerful word processor. I find it reasonably easy to use, as do my 3 sons, although after 4 months of fairly constant writing I'm still finding new features and coming to grips with them. I do find it invaluable when it comes to sending out hard-copy and information to descendants and it has a feature that allows the insertion of names and/or addresses on standard letters. This saves me typing out the same thing time after time to send out to the descendants of one family.

I guess that all this looks like a mighty expensive filing cabinet. The total package consists of one Apple II Plus, 2 disk drives, a daisywheel printer, PFS File and Zardax. Total cost? About $3,500. Cost/benefit? I'm more than satisfied. My time is now spent more profitably, my home is less disorganized, the people that need the information have it more quickly, and it will be easier to collate and record the research when it is completed.

Where to go?

Where to now? Well, Margaret Audin, in Paris has installed an Apple IIe, double disk drive and printer, and PFS File. Her files are so extensive, covering so many register entries for British emigrants in France that they too were becoming unwieldy. The advantage of having virtually the same system both here and in France is we can exchange disks, giving French descendants access to our files and making Margaret's files available to us.

One thing is certain, I'm very glad the Apples are on the Family Tree. With a little nurturing, they just might become an orchard.

Chris Sutton is a children's author and deputy principal of St Joseph's School, Bulli, NSW.

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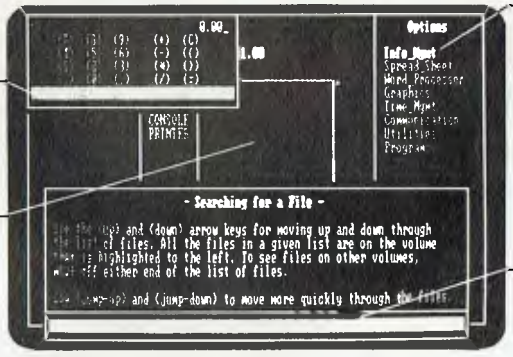

OPEN ACCESS is the result of 60 man years of effort to create a truly super-program that can perform virtually every managerial or business task you're ever likely to encounter.

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OPEN ACCESS uses window technology, including extensive help windows which are available almost anywhere.

Information Manager

The OPEN ACCESS Information Manager is a Relational Database Management System featuring advanced functionality and simple to use, interactive, English-like commands. This module allows you to easily tailor database files, screen layout files, and report layout files to fit the needs of your application. Once information is entered into the files it may be quickly retrieved using the English-like statements of IBM's SQL query language. Once retrived, records may be displayed, updated, removed, appended to other files, included in reports or form letters, and/or moved to another OPEN ACCESS module.

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The OPEN ACCESS Spreadsheet is the first of a new generation of spreadsheet modules. This Spreadsheet not only includes the normal "what-if" processing capabilities found in all other spreadsheet programs, but it also includes "how can" processing. This is accomplished through the Spreadsheet's Goal Seeking feature. The OPEN ACCESS Spreadsheet module includes additional features not found in other "advanced spreadsheet" programs as well as all of the standard features.

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With the OPEN ACCESS Graphics module, you may take raw numeric data and create beautiful color graphs. The numeric data may come from another OPEN ACCESS module or it may be entered interactively in the Graphics module. You may create two-dimensional bar graphs, pie charts, and line graphs. In addition, you may: build three-dimensional bar graphs; overlay bar and/or line graphs on top of each other; or separate bar, line, and pie graphs each into their own window.

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Word Processing in OPEN ACCESS provides you with a complete text editing and text formating system. Text may be easily typed in and then edited as necessary. Once your document is in the proper form, you may print it out with a wide variety of text formatting options. You can easily incorporate information from the Spreadsheet, Information Manager, or graphics module into Word Processing documents.

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OPEN ACCESS Communications allows you to communicate with the outside data processing world. The Communications module may operate in any one of three modes; micro to micro to allow for file transfers, etc; micro to subscription network; and micro to mini or mainframe as a dumb terminal emulator.

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The OPEN ACCESS Time Manager provides you with an assistant to help you or your secretary to efficiently organize your engagements. The Time Manager enables you to enter individual appointment records and then list them on a day-at-a-glance screen. A search command lets you retrieve an appointment by who it is, or the subject, when you have forgotten the time and date of the appointment.

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OPEN ACCESS is available on a wide range of computers including: IBM PC/XT or 100% COMPATIBLE, CORONA, RAINBOW, HP150, HYPERION, NCR, TI PROFESSIONAL, TOSHIBA T3000, COMPAQ, COLUMBIA, TANDY 2000.

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USA

Looking Ahead

Another PC Show (this time in Melbourne), a Business Systems USA '84 exhibition and the first combined Libraries Associations of Australia and New Zealand Conference in Brisbane now not that far away, reflect the current hectic conventions calendar.

The recent Comdex Atlanta show proved as our wandering guru, Kevin Howard reports, that IBM has firmly set the standard world-wide for personal computers. Will Aussie shows follow suit?

At Milsons Point, Sydney, the US Marketing Center is staging the Business Systems USA '84 exhibition from July 31 to August 3. More than 2,000 visitors are expected and, of course, Today's Computers will be there.

Wayward Scots

Ken MacKenzie (we wayward Scots should stick together) marketing manager of the US Marketing Center, tells me that more than 30 American companies will be represented by their Australian agents.

The Georgia Department of Trade and Industry will represent 11 companies, of which 6 are looking for local distributors.

Those exhibitors of most interest include Daro, with its HiNet local area network, Prest Computers, with its floppy disk and hard disk personal computers, and Warburton Franki, with its Zenith personal computers.

Zenith's LAN

Warburton Franki's Peter Dawson notes that the Zenith PC was second only to Compaq in the IBM personal computer compatibles market in 1983. Dawson bases his statement on world-wide factory values. In Australia, Zenith is now also offering a local area network (LAN).

Also at Business Systems USA is Olivetti Australia, on behalf of Syntrex Inc, which boasts an electronic typing system.

– Ken McGregor

AUSTRALIA

Personal Computer Show	July 18-21	World Trade Centre, Melbourne, Graeme Selby (03) 26 7400
Business Systems USA '84	July 31-Aug 3	US Marketing Centre, Sydney, Ken MacKenzie (02) 929 0977
The IBM Impact	August 1, 2	Hyatt Kingsgate, Sydney Yankee Group, (02) 399 8200
Office Expo	August 8-9	Newcastle Workers, David Kyle (02) 958 1811
LAA-NZLA Conference	August 27-31	City Hall, Brisbane (07) 371 7900
ACS NSW Conference	Aug 31-Sept 2	NSW branch, Australian Computer Society, Terrigal, George Walker, (02) 233 7677
Computer Education Conference/ Exhibition	September 3-5	Macquarie University, Sydney NSW Computer Education Group (02) 20584
Office Expo	September 26-27	Masonic Businessmen's Club, Parramatta, Sydney, David Kyle (02) 958 1811
EPOS 84 retailers	October 15-18	Moonee Valley, Racing Club, Victoria, Ken Lane (03) 536 2386
Eleventh ACS Conference –	Nov 4-9	ICMS, Bev Parrott, (02) 241 1478
Personal Electronics Lifestyle Expo 84	December 6-9	Centrepoint, Sydney, Graphic Directions, Colin Archer (02) 212 4199

Ken MacKenzie, marketing manager of the US Marketing Center, forecasts over 2,000 delegates to the Business Systems USA exhibition July 31 in Sydney. One exhibitor is NEI Paklog which markets the Extel Corporation automatic message terminals, with Arthur Marsh overseeing sales.

OVERSEAS

Personal Computer Userfest	September 20-23	New York
SEARCC 84	September 24-28	City Hall, Hong Kong Computer Society George Walker (02) 233 7677
IBM PC Faire	October 26-28	San Francisco
Information Industry Info Conference	November 11-14	San Francisco
Compex-Computer Peripherals	November 13-16	Olympia, London

NOTE: Need more details of any of the above overseas events? Ring Today's Computers on (02) 235 6515.

Bogged In A Software Morass

Small business should take 'painstaking' care when choosing software, with stringent checks of just what the package offers, especially back-up service.

For the medium-sized family business run by the Wilson and Alexander families, the computer adage that, "as a car is to hardware, petrol is to software, you can't go anywhere without it," had to be learnt the hard way.

Their company had doubled in size in the past 4 or 5 years, accounts, filing and office routines were becoming overwhelming for the 2 couples, and computers seemed the answer.

They still do, but the expectations of swift conversion have long been shattered.

Said Ian Alexander, who has been in charge of the move into computers: "We expected to complete the changeover in 3 to 4 months; we will be lucky if it is complete in 10."

The problems have been related almost entirely to software – poor instructions and manuals, the discovery that programs were only skeletal and that the so-called options were essential.

Ian would recommend to any small business considering computerisation that painstaking care be taken in choosing software, with stringent checks of just what a package offers, and particularly the backup service.

He would also recommend building into the budget for the change either many hours of the key staff's time, or the hiring of somebody temporarily to help carry the extra load, while the traditional "manual" system is still in use, and the new one is being painfully grafted into the company.

Tank Degassing Pty Ltd is a healthy company, as specialized as its name implies. It was launched about 14 years ago by Alec Wilson, who is now almost retired, and his family have progressively taken over.

His son Lee is largely in charge of the operations side, daughter Golda administration.

Ian, the son-in-law, has had various posts in the business, but currently is wrestling with the computer system.

The families have built up a business with a turnover of about $1 million a year by developing the skills needed to clean and service tanks which store petroleum products.

The work can take their teams all over the vast State of Western Australia, with the industrial suburb of Kewdale as the base.

About last August, frustrated by problems related to the company's office routines, accounts, and correspondence, the families bought their first small office computer.

They later bought 2 more, so that one is now at the Kewdale office, used at this stage largely as a word processor, another at the Wilson home, and the third with Ian Alexander at his house.

The company has spent about $15,000 on its 3 machines, double disk drives, printers, and other peripherals.

The machines have shown excellent reliability. The distributor, Micro Data, of Perth, has given the families excellent follow-up service, solving many problems at the end of the phone.

However, cost was not as important as the inconvenience the software caused. On one occasion, when several of the family had gathered to work on installing software related to the cash book, it was discovered additional material would have to be bought. This took a week to acquire.

Again, there was no access to instruction or support. The company finally bought the Wordstar program because there were courses readily available.

Altogether, the delays, and much more complex task of becoming familiar with software than had been envisaged, forced the families to hire a part-time worker to clear the backlog of work.

The payroll for the 18 people on the staff of Tank Degassing is prepared by Lee's wife; as a relatively quick job, it has a low priority in being computerized.

He is philosophical about the challenges the families have faced since last August; but he does feel that makers of software should offer some gentle warning that one can't pick up the new skills in an hour or 2.

And businessmen should be very conservative in their estimates of how quickly the changeover will take place – and its cost.

John McIlwraith is Perth-based writer for The Australian Financial Review.

DON'T MISS THESE!

New Compute! Books from the University Co-op Bookshops

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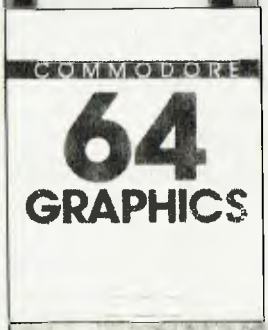

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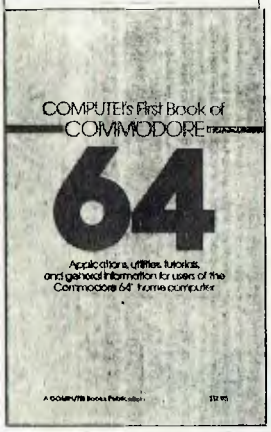

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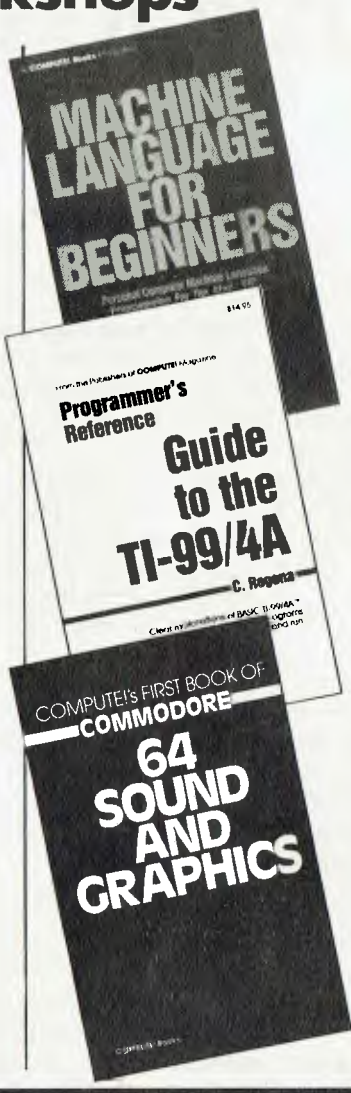

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BOOKS ABOUT COMPUTERS

Marvellously concise and informative

Stock Trading Software Guide
Rod E. Packer, Prentice Hall, 1984.
$25.50.
ISBN 0-8359-7098-1(pbk). 211 pages.

This is a marvellously concise and informative book. It resists the temptation to use jargon and works carefully and intelligently from the big picture to the small. Clearly the author, Rod Packer, understands both trading and computers.

His first and primary objective is to map out the territory of systems design and specification for computer-based trading aids. In so doing, he incisively summarizes the different philosophies of trading – the fundamental, the technical and the opportunist. His exposition of the various trading approaches could serve as a model in very good company indeed, and yet this is achieved as a warm-up exercise to his main theme – namely, what can computers bring to the party and can software be tailored to complement individual trading styles?

Mr Packer's short answers are "a great deal and yes". In general, I find these conclusions impossible to disagree with.

It would perhaps be best to briefly review the conclusions in relation to each of the 3 major trading approaches:

FUNDAMENTAL: Computers are ideally suited to sifting through mountains of information and drawing conclusions in accordance with set criteria. This strength comes to the fore in fundamental analysis. This is especially so in the US equities market which comprises some 40,000 tradeable stocks. Try to intelligently review even a fraction of those without a floor of highly-paid analysts!

Whether the computer should merely be used to screen the universe for opportunities deserving of skilled human attention, or whether the software should have a decision-making capacity is a weighty question. There will undoubtedly always be eager proponents of both views. As always in this book, Mr Packer doesn't attempt to answer the question with finality – he simply presents the issues with admirable clarity.

The fundamentalist software section is sub-divided into "Buy and Hold", "Sell or Hold" and "The Dynamic Portfolio", again working logically from the foundation stones of fundamental analysis to responsive (ie, dynamic) software design.

TECHNICAL (MARKET) SOFTWARE: This has been the area of greatest focus over the last decade or so. Computerized trading systems are in vogue and computerized technical analysis is forging ahead. Here again, the author sub-divides the section into 3 quite distinct categories: "Buy Low/Sell High" (in other words trend-following systems), "Breakout" software (designed to highlight radical and potentially profitable departures from normal price behaviour), and, finally, "Risk Averse" software which, in essence, assists the trader in playing pricing distortions and/or diverging extremes off against each other.

OPPORTUNIST SOFTWARE: This is an invigorating, humorous and somewhat radical section. "Opportunist" software, of necessity, tends to venture into the area of near-subjectivity and is therefore, at its best, clearly an art-form rather than a science. Mr Packer is wholly aware of this. He simply attempts to outline the principles of trading systems based on "analysis" of human emotions and examines how computers can bring a greater efficiency to this arcane and presumptuous task.

Given that this reviewer tends towards "opportunist" trading attitudes, this section was especially interesting.

Mr Packer has supplied 3 marvellous sub-headings: "The Bandwagon" approach (ie, find out what the crowd is doing and exploit their enthusiasm or despair), "Against the Crowd" (ie, when "they" are *all* doing something, do the opposite) and, finally, "Showbiz" software (ie, work out what delectable equity or commodity morsel the crowd will fall in love with next).

Ambitious stuff, this!

Throughout, the author maintains a sense of clear purpose, good humour and reassuring humility. Currently available software packages are listed and briefly reviewed in an Appendix which is worth many times the price of the book itself.

In summary, a superb effort and a downright good read. It is made wholly palatable by the fact that Mr Packer recognizes and accepts that the ultimate hardware/software combination is already in existence – the educated, disciplined and experienced human mind.
– Ingolf R. Eide

A valuable addition to a library

The RS 232 Solution
Joe Campbell, Sybex (ANZ), 1984.
$30.95.
ISBN 0-895-88-140-3. 194 pages.

Undoubtedly, this reviewer could have saved endless hours of frustration over past years had he had access to this book. This readable and informative publication leads the reader logically through the maze of the RS 232 standard. The author uses non-technical terms, and illustrates his points with useful diagrams.

Parts one and 2 of the book cover interfacing basics of the most simple interface of Transmit and Receive data lines. He outlines the problems that even this simple interface can present in the connections of combinations of DCE and DTE devices. Such problems are further complicated by the fact that computer manufacturers can and do configure their RS 232 ports as either DTE (Data Terminal Equipment) or DCE (Data Communications Equipment).

Campbell makes the essential point that the RS 232 standard was originally designed to connect terminal and modem equipment only, and that as soon as we attempt to interface with other equipment such as printers, we may be in for trouble.

Handshaking is introduced in the second half of part 2, and incompatibility problems are discussed.

Part 3 gives the reader an insight into the role of the UART (Universal Asynchronous Receiver Transmitter) in communication. This theme is developed to illustrate the need for the additional control lines of the RS 232 interface and the associated hardware and software handshake needs of much equipment.

I particularly liked the central section of the book which outlined many software and hardware tips and tricks for interfacing equipment using RS 232 standards. The step-by-step trouble shooting page is a valuable page – worth committing to memory.

Tools of the trade

The last chapter, Tools of the Trade, describes the needed equipment; breakout boxes, switch boxes, and testers available (in the US) for RS 232 trouble shooting.

The book makes a valuable addition to a hobbyist or technician's library.

– Geoff Warrener

BOOKFINDER

1 2 3 Managerial Worksheets
Robert Schware. Dilithium (ANZ). $35.95.
ISBN 0-88056-195-5. 114 pages.
Seventeen worksheets are offered to make it easy for you to set up tasks in 1 2 3. The 4 parts are Administrative/Record keeping, Planning and Forecasting, Sales and Marketing, and Integrated Worksheets. The Australian edition may offer these templates on disk, but meanwhile, you have to key them in yourself. Designed for the first-time user.

Computer Power in Your Law Office
Daniel Remer. Sybex (ANZ). $35.95.
ISBN 0-89588-109-8. 144 pages.
Remer looks at lawyers' purchasing experiences as well as his own in this guide, which is intended to help lawyers make the transition to the computerized office with a minimum of fuss. Although it is written for the US market, many of the concepts appear relevant to Australia, particularly the clear treatment of worksheets, accounting and database.

Portable Micro-computers. A Businessman's Guidebook.
Deloitte Haskins and Sells. 1984. $14.95.
ISBN 0-9592451-2-X. 110 pages.
This booklet considers 11 brands of portable computer – the Apricot, the Colombia VP, the COMPAQ, DOT, Hyperion, Kaypro 11 and the Osborne Executive. Briefcase portables discussed are the Apple IIc, Dulmont Magnum, Gavilan SC and the NEC PC 8201. The IBM portable is considered.

A Manager's Guide to Local Networks
Frank Derfler Jr and William Stallings. Prentice Hall. $23.95.
ISBN 0-13-549758-2. 154 pages.
Batch transmission diagrams and front and rear views of network transmission boxes, together with figures of bosherrel m-4 synchronous short-haul modems interspersed with productivity citings for representative equipment types cry out for tighter editing by Prentice Hall. A pity, because most managers would like to know what a local network is, and what it does.

Microcomputer Datacommunications Systems
Frank J. Derfler. Prentice Hall. 1982. $19.95.
ISBN 0-13-580712-3, 120 pages.
In these torrid technological times, 2 years makes a lot of difference. If you know nothing at all about computers and communications, you may find Derfler's book useful. It otherwise deals with the Heath-89 and the TRS-80 1, neither of which are available in Australia. Apple II, S 100 systems, and CP/M are also covered. A chapter on bulletin boards gives good basic information.

The RS232 Solution
Joe Campbell. Sybex. 1984.
ISBN 0-895888-140-3. 194 pages.
Theory and practice come together in a do-it-yourself guide to connecting those RS232 printers, modems plotters and terminals that you can't get to go the way the manuals say they will. The author warns that as your RS-232-C interfacing skill grows so, miraculously, will your popularity. He advises on tools, and presents 5 case studies (eg. IBM/NEC) and gives advice on interfacing modems.

Understanding C
Bruce H. Hunter, Sybex (ANZ). 1984. $39.95.
ISBN 0-89588-123-3. 320 pages.
Understanding C just solidly gets on with the job of presenting C as it exists on UNIX and all other operating systems. It tries to distract you from the serious business with cutesy cartoons but it is otherwise by programmers for programmers with a bit of contemporary US software history thrown in. It compares C compilers, and otherwise deals with how C works, and how to get C programs up and running.

– compiled by Laurel Allen.

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The Kitchen Computer

The average housewife is said to be the market for Dick Smith's Cat, a powerful package for the money. But is it destined to be dominated by mere games?

Much has been written about Dick Smith's latest entry into the already crowded computer market. Priced as it is, the CAT computer is in its own right very good value for money.

When one couples this with the fact that the CAT will run most of the programs written for the popular Apple computer, it would appear that Dick Smith has a real winner on its hands.

What then is a CAT? Basically the CAT is a computer packaged into a keyboard. This package also provides ports for plugging in a variety of peripherals. Peripherals such as disk drives, printers, etc.

For the technically minded, the CAT computer has a powerful built-in BASIC interpreter as well as excellent sound, music and graphics capabilities. Since it is the purpose of this article to investigate the "user friendliness" of the CAT, I won't enter into the technical aspects as such. Much has already been written illustrating that the CAT is a very powerful machine for the money.

Dick Smith has traditionally aimed his products at the electronics home hobbyist and as such has assumed a high degree of skill and technical competence. As long as a manual exists, such a person can find the necessary information needed.

It has been said that the Dick Smith organization sees the average housewife as a target market. Mum will apparently go out and buy a CAT to help the kids with their homework as well as double as a household reference, much like an encyclopedia. Obviously hoping that a computer can either act as a surrogate parent or fill a gap in the parent's ability.

I am afraid that I am one of those cynics who can not see any real reason for the average home to have a computer – let alone how any home computer, using current technology, is going to help my son with his German homework or tell him the nams of the wives of Henry VIII. Whether intended or not, games eventually dominate the home computer.

If we assume, however, that Mum is going to buy a computer regardless, how successful is she going to be in terms of finding what she really needs?

The first stage in user friendliness involves buying the right combination of hardware and software, unboxing it, plugging it together and getting it to work. Right now, Dick Smith markets the CAT in the traditional way – ie it is aimed at the do-it-yourself hobbyist. If the computer uneducated are going to buy CAT computers by the score, then Dick Smith needs to rethink its packaging.

Basically, all that is needed is a standard package of hardware and software with not only the current manuals, but a single overriding document of two or three pages that tells the customer in simple steps to help.

As it exists now, the information is all there, but spread through several manuals. An example of one possible point of confusion is the way in which the CAT is made to emulate an Apple computer. At first sight, it would appear that all that is needed is an Apple emulator card and that this is simply plugged into the appropriate slot in the side of the CAT computer.

Not so, a diskette called FILER is also required and in the appendix to the FILER diskette manual is a BASIC program that needs to be keyed in and saved back onto the FILER disk. Obviously not a trivial exercise for the computer novice.

Once the CAT is up and running, it has many nice user-friendly characteristics. The keyboard is a standard typewriter keyboard that has a nice feel to it. As well there is a calculator pad to the right of the keyboard. This is for numeric input. This pad has its own Enter key. Above the numeric pad are four cursor keys for easy editing. These keys move the cursor not only left and right, but up and down.

The only negative comment I have to make about the keyboard concerns the placement of the rub out key. It is right above the return key and is easily hit during data entry.

In conclusion, the CAT is an excellent machine and Dick Smith is very well placed with its distribution network to tackle the consumer market. If Dick Smith makes an effort to address the needs of the computer novice, then it will be well ahead of the competition.

Dr Brownlee is now working as an independent consultant out of Sydney after 9 years with Hartley Computers.

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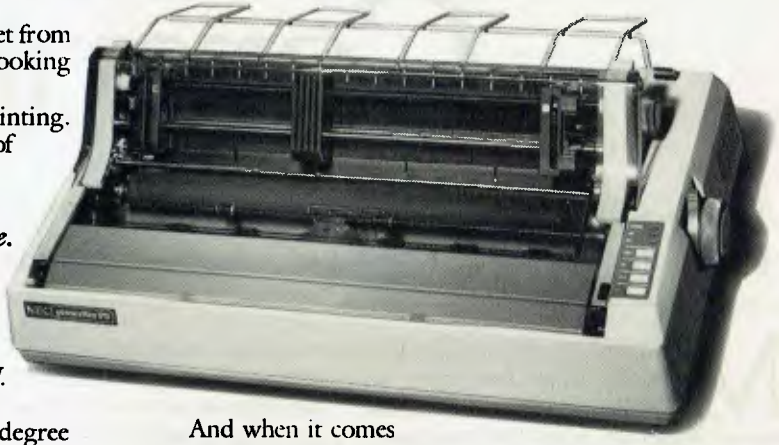

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Answerline

Communications is an increasingly vital area of personal and small computer applications. Today's Computers publishes each month an answerline from Telecom Australia that could solve your communications problems.

Again, this month, Telecom Australia answers readers' questions on communication. Write to us with your queries and we will have the country's domestic telecommunications authority solve your problems.

Question: *We are a diversified manufacturing and services company, total sales $35 million, and our communications costs, mostly telephone-telex, are about $1.5 million. Do we need a communications manager and what should be his brief?*

Answer: The job of communications manager requires a real understanding of how company staff carry out their work and a knowledge of telecommunications services available in the marketplace. Responsibilities are not only to contain costs but to look at ways in which telecommunications can enhance the company's way of doing business. Communications should be considered as a tool to improve the bottom-line return of the business and not as an overhead expense.

Yes, you do need a communications manager, but it need not necessarily be a full-time position in a company of your size. Perhaps it can be the partial responsibility of an executive operations Manager. His brief might be summarized as the on-going responsibility to ensure that telecommunications services are provided and managed in ways which make a cost-effective contribution to the overall operations of the business.

Q: *We are a major food manufacturer, with sales of $300 million in 1983. We wish to co-ordinate reporting for our telecommunications. Ideally, who should our communications manager report to? Should we let him continue reporting to EDP, or to our chief executive, or financial controller?*

A: A company of your size would appear to need a communications manager at an executive level, preferably on the operational side. It is not appropriate for him to report to the financial controller, whose main responsibilities are costs. The EDP manager is also inappropriate as he is only one of the company's users of telecommunications services, and usually isn't responsible for deciding in what ways communications services will be used to improve overall business efficiency.

Q: *We are interested in installing a Watts service. But what are the major applications for Watts services and can you give us 3 examples of Watts applications in Australia, aside from airlines? In other words, what is Watts?*

A: The service being described here as Watts is Telecom's 008 service, formerly called Inwats. With this service, callers can contact a 008 service customer from anywhere in Australia (using an Austwide service) or the State in which the 008 service is located (using a Statewide service) for the cost of a local call.

The 008 service customer pays a rental of less than $20 a week for the first service (less for second and subsequent services) and a flat hourly rate for the actual time the service is being used by callers. The hourly rate varies with the time of day and the type of service, eg, a $30-an-hour day rate for an Austwide service, and an $18-an-hour rate for Statewide services for NSW, Victoria and South Australia, $21 an hour for Queensland and Western Australia, and $12 an hour for Tasmania. Discounts apply during off-peak times and during a 2-hour period – 12 to 2pm.

In Australia the 008 service has a diverse range of applications such as centralized product support, as a "hot line" for customers having problems with suppliers' equipment, as a marketing response mechanism, and as a service that allows customers to place orders directly with suppliers in between visits by sales representatives.

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On Line-Libraries

A PC and a modem can put vast libraries of information at lawyers' fingertips. Those who research the law will appreciate this map of the major, commercial, on-line databases.

A computer that can recite the law is an authority to which the unsophisticated layman surely would defer. But for lawyers, the computer—even one versed in the legal code—is not a teacher, but merely a tool that is only as authoritative as its database.

Legal databases have been growing and are now being fine-tuned to serve the research needs of lawyers who have access to phone lines and a PC.

Before the on-line database, there was (and still is) the paper database—*U.S. Reports, United States Code,* the statutes of the 50 states, and untold numbers of other sources amounting to millions of words of material. The trick is to find the right ones before you run out of time and your client runs out of money.

For centuries, lawyers depended on their own memories or the kindness of indexers to help them in their quest. But for nearly a decade and in increasing numbers, large law firms have subscribed to Mead Data Central's computerized legal database, Lexis, to cope more efficiently with the search for legal precedent.

Lexis reduces the full text of federal statutes and state and federal judicial opinions to a format the size of a personal computer terminal. Lexis offers you the equivalent of the whole book, of which any part can be called up on screen. If you type in a string of words, such as "due process of law," the computer will find all the cases and statutes that contain it.

Mead Data Central's only serious competition comes from the venerable West Publishing Company of St. Paul, Minnesota, a sleeping giant in the field of law book publishing. West Publishing has belatedly offered a computerized full-text research service. Other competitors operate at the periphery of the market.

Dialog indexes the writings of legal commentators. Offered by Lockheed's Dialog Information Services, Inc., of Palo Alto, California, this information retrieval service contains hundreds of separate databases, several constructed especially for lawyers in such areas as patents and criminal law. Because many of the Dialog databases are bibliographic rather than full text, after you locate a citation, the most you will have without the resources of a library is an abstract or digest of the report, journal article, or book in question.

Last year, the Bureau of National Affairs, with offices in Washington, D.C., and other major cities, offered a full-text electronic version of its well-established print services, the *Daily Tax Report* and the *Daily Securities Report*. Though its labor and patent law services are available through Dialog without subscription, these new products are being marketed directly to subscribers.

The Chicago-based Commerce Clearing House, a leading publisher of loose-leaf materials on such topics as tax, labor, and securities law, decided to approach the computer cautiously. It is still beta testing its Electronic Legislative Search System that will track thousands of proposed laws under consideration in federal and state legislatures.

Illustration: Michael Ng

tion, isn't the proliferation of database services a step backwards? Aren't Lexis and Westlaw just Tweedle Dum and Tweedle Dee? Granted, what they offer appears redundant, but competitive pressure can produce advantages.

For instance, since West Publishing Company challenged Mead Data Central, both companies have expanded their available databases and branched out in different directions. The atmosphere at each firm's headquarters is one of aggressive growth. Moreover, Lexis has just announced a new pricing structure in response to the competition.

In the quest for a greater market share, each firm now permits customers to access its database with a modem and a general-purpose micro, such as the IBM PC. Westlaw took advantage of the state of the microcomputer art early on to let you access Westlaw on your own machine rather than one rented from the service. Lexis met the competition this past fall, dropping its requirement that you rent one of its dedicated terminals for $55 to $150 a month as a condition of subscribing.

The Data in the Base

The main overlap of Lexis and Westlaw is in the core data, which for the majority of lawyers counts the most: the full text of all federal statutes, regulations, many administrative decisions, and most significant federal and state court cases.

On both systems, federal taxation is one of the most thoroughly documented areas. Thanks to the Freedom of Information Act, items in the databases range from internal memoranda of technical advice from the Internal Revenue Service national office to its agents in the field right down to the private rulings requested on specific situations with taxpayer names deleted. An advantage of accessing private tax rulings is that you can discover the positions the IRS is taking on sensitive issues without raising your head (or your client's) above the foxhole.

Each service extensively covers the patent field in special libraries, but with differences that are important to the practitioner. Westlaw contains the federal statute, the regulations, and the court cases in full; Lexis duplicates this, adds some administrative decisions, and, through its new Lexpat, supplies the full text of all patents issued since 1975. Dialog weighs in with six highly specialized databases—patent claims, abstracts, citations, classification codes, and a chemical dictionary. Dialog offers information of varying depth and for different periods of time, with an index containing the case name, an abstract, a subject classification, and bibliographic citations.

Lexis and Westlaw cover the case law of the 50 states in the form of the judicial opinions of the highest state courts and selected lower courts. The statutory law of the states is generally not on-line, although Lexis does offer New York statutes.

Both systems contain *Shepard's Citations*, which traces the history of a decided case to see if it's been overruled or distinguished, but each has its own method—Lexis's Auto-Cite and Westlaw's Insta-Cite—to do the job faster and better.

Westlaw has special libraries on military justice, admiralty, insurance, and Eurolex, while Lexis features British and French law libraries and the full texts of over a dozen treatises on such topics as acquisitions, mergers, bankruptcy, labor law and litigation. Lexis supplements its formal law resources with selected annual reports and proxy statements of publicly traded corporations chosen by the American Institute of Certified Public Accountants and with the pronouncements of the Financial Accounting Standards Board.

Specialty of the House

What most distinguishes Lexis is its recent addition of Nexis. Nexis is a full-text library of over a dozen newspapers (including the *Washington Post, New York Times, Legal Times, Computerworld, Japan Economic Journal,* and the *Current Digest of the Soviet Press*), over 30 magazines (the *Economist, Forbes, Newsweek,* and *Byte*), 10 wire services, and 3 dozen newsletters.

According to Mead Data Central, the Nexis library will give lawyers news of developing legal issues before the lengthy process of enacting a statute or deciding a case is completed.

The most touted features of Westlaw's coverage are its editorial additions: the headnotes, the synopses, and the key numbers, first created to enhance the law books in the West Publishing stable. These summaries use common, less-formal terminology rather than the technical legalese that is found in many statutes and judicial opinions. They can help find a case that is otherwise buried in esoteric legal vocabulary. The key numbers allow a lawyer to retrieve authorities by topic from a numbered list of common legal concepts.

> Lexis reduces the full text of federal statutes to a format the size of a personal computer terminal.

If, instead of cases or statutes, you want an article discussing your problem, Dialog is your best bet. It offers the Legal Resource Index to over 700 law journals, half a dozen legal newspapers, and a gaggle of government legal publications from the Library of Congress. Once you unearth your citation, then it's back to the hard copies, unless the reference happens to be to one of the six law journals for which you can switch to Lexis for full text—those from Harvard, Yale, Columbia, and the Universities of Virginia, Chicago, and Pennsylvania.

This completes the map of the electronic law library that PC users can plug into. A discussion of how best to use the database services for legal research will be the subject of a future law column. ■

Oh, HP, Thanks For the Memory

Out of the flood of portable PCs, most a bit short in the memory department, comes Hewlett-Packard's application of VisiCalc for the HP75. It makes for a powerful, but expensive, package.

The past year has seen a flood of portable computers aimed at, presumably, the peripatetic professional.

These machines usually include BASIC, a full-size qwerty keyboard and a minimum of 16K of memory.

While these machines are usually quite satisfactory for word processing they suffer from one drawback – the inability to run major software because of a lack of memory. And as the software sales figures show, the most sought-after programs are spreadsheets.

Well, Hewlett-Packard has an answer in its application of VisiCalc for the HP-75 portable computer because this program is supplied in a plug-in ROM that takes up no memory and offers all the expected facilities while adding a few surprises of its own.

Let's have a look at the package. The HP 75 was the world's first lap computer. Introduced in 1982, it remains the smallest of the breed, being only 12.7cm x 25.4cm x 3.2cm, this being achieved by shrinking the standard qwerty keyboard by about 10% and providing only a one-line 32 column display which acts as a window on to a 96 character line.

The 75 has a 48K ROM-based operating system and 16K of RAM, expandable to 24K. While this is less than is offered by rivals such as the Tandy TRS 100, it is all usable, there being no limit to the number of files that can reside in memory.

Software is available on 2 media. It can be entered using the pull-through magnetic card reader on the front of the 75 or, like VisiCalc, by plugging a ROM pack into any of the 3 ports on the machine's front face.

The HP75 at work

Once running, VisiCalc works like most other spreadsheets except for a few modifications to make the spreadsheet easier to live with when you can only view one cell at a time. The grid address is shown on the left of the display followed by a colon and then the contents of the cell. If the colon is underlined, the figure to the right of it is a calculated value.

Most of the common spreadsheet commands are available and like the original VisiCalc, are accessed through the "/" command key.

These include DELETE rows and columns, INSERT rows and columns, MOVE rows and columns and REPLICATE in which cell contents are copied to other locations and if required, references to other cells in a formula are readjusted to keep relationships the same.

By using a "/H" command, you can write row and column names which will then be displayed unless switched off. HP calls these labels Headers and they can be used instead of cell co-ordinates as an address in a formula.

The EDIT key invokes the 75's text editor and displays the contents of the cell.

You can print all or part of a spreadsheet, with or without headers, with the /P command. However you must exit VisiCalc to PURGE a file or COPY it to cassette or magnetic cards.

VisiCalc also accepts all the commands in the HP-75's BASIC set except those involving text manipulation.

The addition of the plug-in Mathes Pac adds to VisiCalc's mathematical power since this module contains not programs but 81 new BASIC commands.

All in all, this is an extraordinarily powerful package but an expensive one. Many potential users will have a hard time justifying an expenditure of $1,492 ($1,692 with sales tax) for the 16K base computer plus $292 for the VisiCalc ROM ($331 with tax) and the same again for the 8K memory expansion pod.

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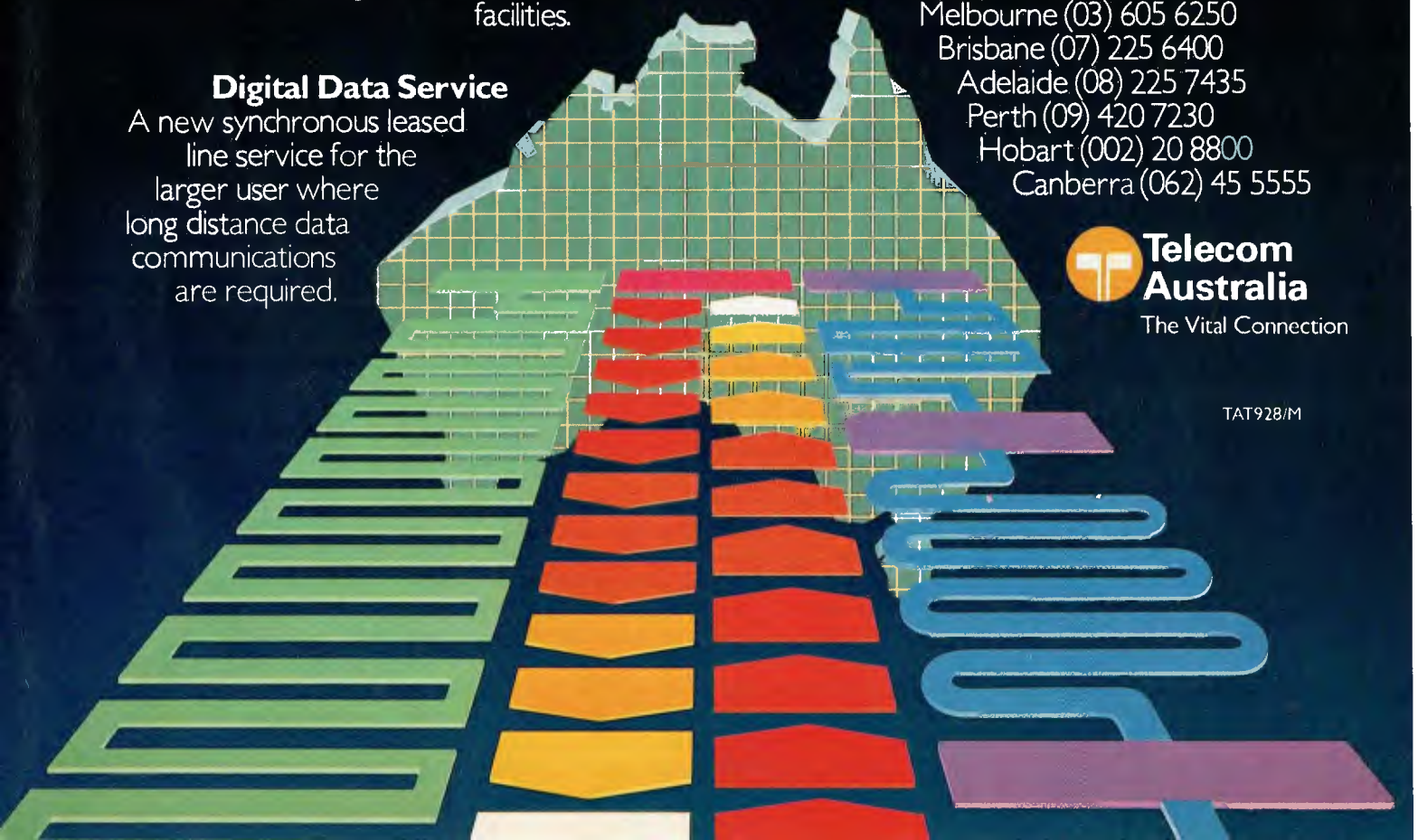


Telecom Australia
The Vital Connection

TAT928/M

Sad Tales From Hi-Tech Annals

Sometimes computers won't work for you. The bargain turns out to be a lemon. Teeth are gnashed. But help is not at hand. You just have to start again.

In my small mountain town west of Sydney, many of the businessmen investing in computers are delighted with the results. The local milko, for example, has simplified his invoicing using an Osborne 1. It is especially effective in promptly invoicing his major supermarket customers.

He's delighted, albeit his wife *has* remarked lately on his "small screen squint" (he thought a monitor add-on was an unnecessary luxury).

However, a large frozen food distributor has other thoughts. His 5-figure installation – a bargain in an obscure Japanese computer–has proved, so far, to be a disaster. The computer just squats there, inscrutable, unnerving, refusing to run the software that was supposed to transform it into the equivalent of a troop of Sumo number-wrestlers.

The Frozen Food man has ruefully concluded that he shouldn't have been distracted by the dealer's enthusiasm for moving the product, even at "distress" prices. The product and the distress are now his, with no solution in sight since the dealer has ceased operating.

He hasn't given up completely, though. I noticed an advertisement for a Japanese translator in the local CES office, indicating his desire to communicate with the manufacturer's head office in Tokyo (it seems there's no Australian distributor).

The computer remains in the cold room to this day. Meditating on its own Zen, no doubt.

Then there's my "alternative business" friends, Ted and Winsome.

Generating invoices and statements by pencil and abacus may seem to be archaic, but this unique firm had been doing just that for more than 4 years until they bought a state-of-the-art personal computer with appropriate software. So, from their viewpoint, the computer and printer arrived on their premises as if they had landed from another planet. Once installed in their crowded room, even the office cat shunned the hardware until it warmed up. They're considering the energy saving benefits and possible methods of booting the computer with the cat.

They affectionately nicknamed their computer "Aspirin" (a punning reference to the "APC" of the model's designation, as it was explained for my dull-witted appreciation).

As long-time specialist "alternative lifestyle" book distributors, they're proud of their anti-machine stance and are finding it difficult to explain "Aspirin" to friends and customers who know about their professed Luddite attitudes. I notice that lately they've even gone to the extent of pushing about their motorless car occasionally, rather than leaving it entirely alone as a child's cubbyhouse. Today a computer, tomorrow? Who knows!

They carry more than 500 book titles from inventory and represent some very prestigious specialist publishers from North America and the UK. With 3 part-time employees, they service several hundred booksellers in Australia and New Zealand.

"BC" (before computer) it took 38 hours for Ted to laboriously write up the invoices and statements, using a pencil. But at least they kept up to date on billing.

Ted and Winsome were still coming to grips with their "Aspirin" computer when I talked to them. They seemed intrigued with the idea that as soon as they mastered the software they would be able to throw away their pencils. Actually, they'll keep their pencils in case of power failure, which occurs frequently in the upper mountains.

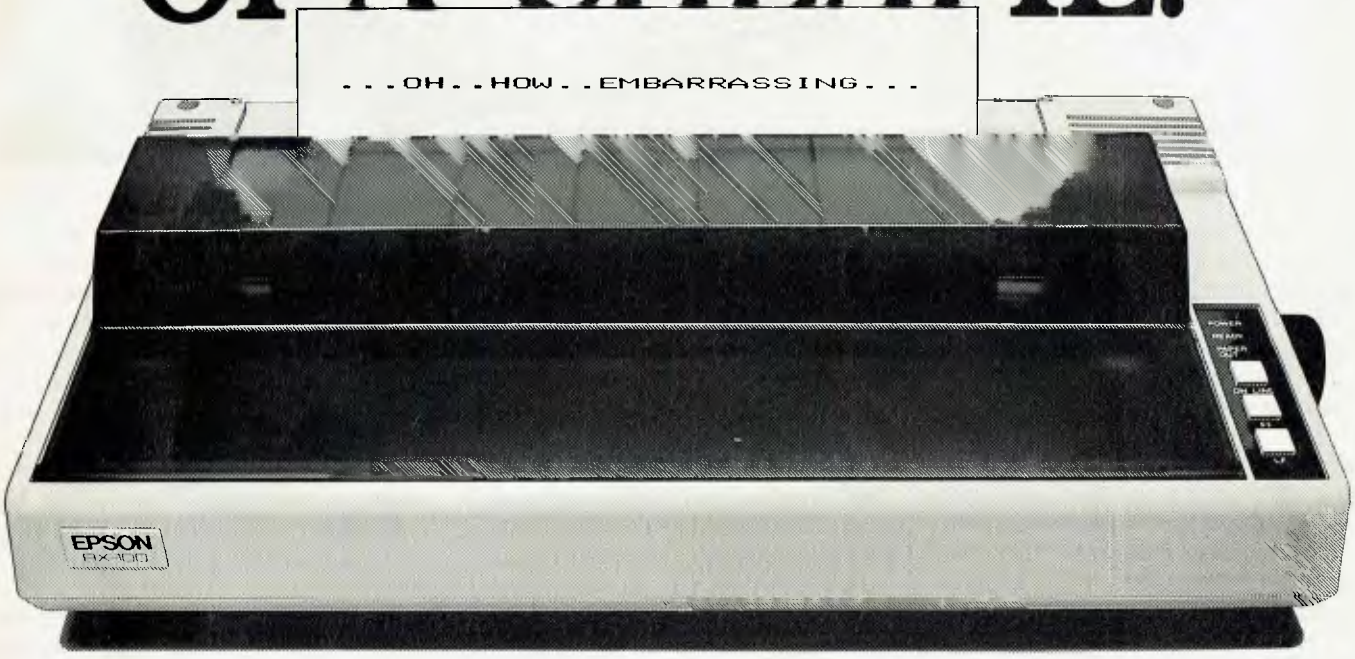
"You know," Ted said, musing, "I felt *comfortable* using a pencil to get out the invoices. With 'Aspirin' I'm not sure if and when *everything* is going to get swallowed up electronically, never to appear again."

I immediately recognized the very personal computer castration effect that I had read so much about in the US computer psychological-self-help journals.

There is evidently a widespread, irrational distrust of personal computers in the US, because they evoke a sense of physical loss. This leads to alienation of electronic affection, ending in a sense of superfluousness likened to being the spare pilot of a completely automated space craft.

In contrast to Ted and Winsome, a neighbouring sporting goods manufacturing and importing firm with a 10-

AN EPSON RX-100 PRINTER FOR THE PRICE OF A "CHEAPIE."



If it weren't for the fact that the EPSON RX-100 comes from the world's largest and most widely accepted range of quality printers, its price could fool you into thinking it was a "cheapie".

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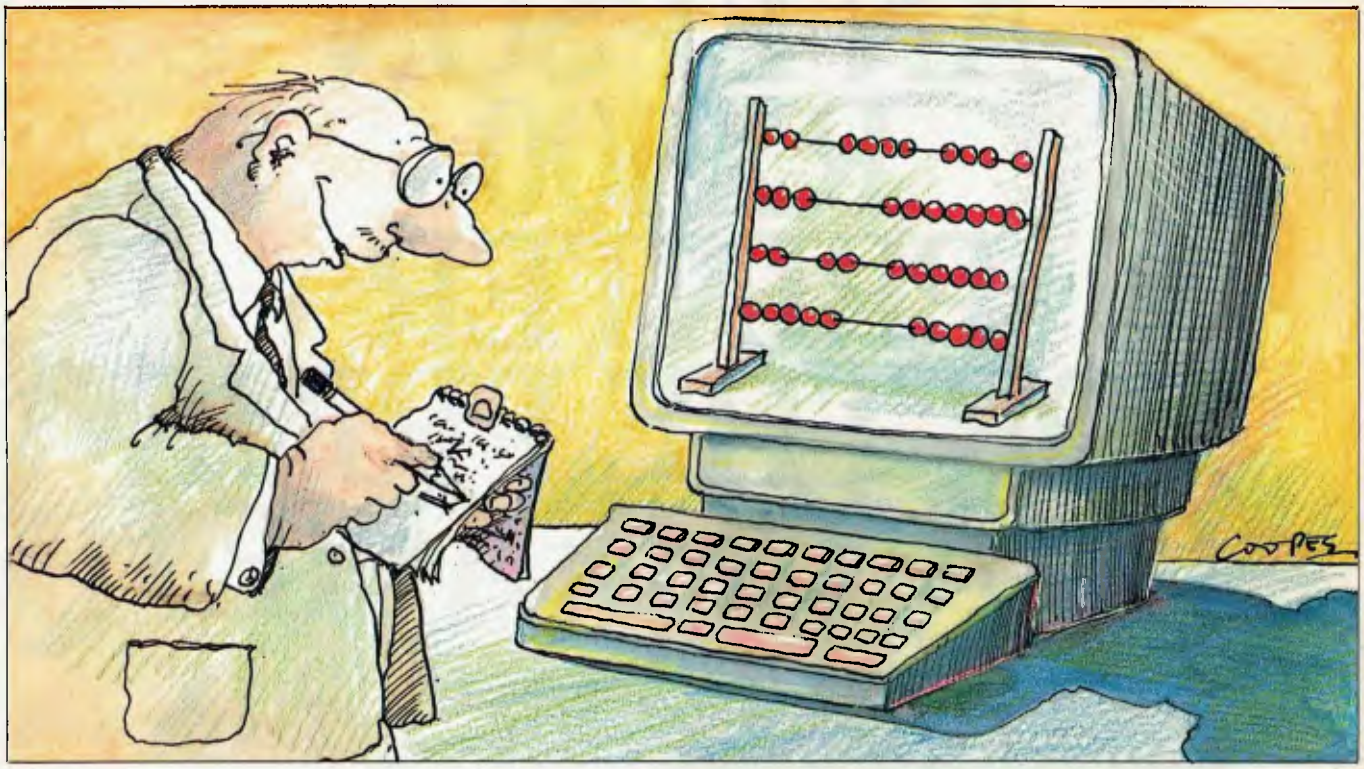

megabyte American installation is not so much alienated as disenchanted. The firm is still 3 months behind in its monthly debtors and has used up all available memory and patience. The firm spent about $40,000 on appropriate software through a consultant. But this, too, hasn't worked.

The US-wholly-owned Australian sales force is quite concerned, because this installation was to be a jewel in its crown. It was to demonstrate to other middle-sized businesses that their needs weren't impossibly down-market to the multi-million-dollar government contracts that were apparently all computer firms were concerned about.

A US software expert, flown out at the manufacturer's expense, admitted privately that there was no way to recover the situation and that the software created was totally inappropriate.

"It was a matter between the program consultant and the customer," he said, shrugging his shoulders and winging off to Lowell, Massachusetts, where he seemed much more comfortable with customers who had 50-megabyte computer increments to work with. Meanwhile, the sporting goods importer struggles on with an overworked US "tank", as it's come to be unaffectionately called.

Perhaps, I hear you thinking, all of these problems are due to unskilled, ignorant computer users who should have done their homework beforehand?

Take the final example. My sunrise industry, hi-tech friends from the same village, read every computer journal from the US (via airmail). They talked with everyone in or near the computer field. They had built their business up to the extent where they thought all would be well if they left their multi-terminal installation of PC's in the hands of skilled and faithful employees.

Imagine their horror, upon returning from an overseas trade show, to discover that a little-known feature of their popular database program had been accidentally executed, completely wiping out their database of all customers, prospects, debtors and creditors. They had been a bit lax in making back-up copies of their database disks.

When asked recently about whether they would recommend that particular software brand to other firms, all that I could get was a muttered: "It ain't dBest!"

What *is* the answer? How does one escape these everyday horror stories of computers and software that don't perform?

From my off-the-record research, consensus dictates it's advisable to:

(1) Talk to other users of the computer brand you're thinking of purchasing. If you can't discover any through your dealer, wipe the brand and possibly the dealer. Why be the first kid on your block to dice with computer-death?

(2) Talk to users of the software program you're thinking of purchasing. Ask them about the problems they've had, as well as the good days they've experienced.

(3) If you have your needs analyzed by a computer systems expert, try and get a second opinion. You might avoid underestimating your memory or networking needs.

(4) Try to take a familiarization course in personal computers. Make sure it offers an overview of what you should reasonably expect from the state of the art of personal computer technology.

And finally, talk to Ted and Winsome about the good points of writing handwritten invoices with a pencil, as opposed to taking "Aspirin".

Byron Kaufman resides in the Blue Mountains, west of Sydney.

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Ignorance Can Be Bliss

Weirdo Imports (seriously folks, they're a novelty company) uses Canons to help run the business. The manager, a self-confessed computer illiterate, reckons Canon is terrific.

With a name like Weirdo Imports, it might seem that this quietly busy company in Sydney's western suburbs is in the computer business. Quite the reverse. Although there are two Canon desktop machines on the premises, the last thing proprietor Bruce McGetnie plans to do is get over-involved with them.

For him, his Canon is just another item of business equipment.

"I don't expect to need to know what happens inside a typewriter, or what any of the little pieces are called – as long as it prints 'a' when I press 'a'. It's exactly the same with the computer."

The company has 2 Canons because it outgrew the first one before its lease expired. The CX-1 now sits on top of a filing cabinet waiting to be given new work. Meantime, the newer AS-100, handling invoicing, stock and debtors, is an indispensable part of the business.

Established in the mid-1960s as a wholesale extension of an existing retail venture, Weirdo Imports distributes a large range of low-cost novelty and toy lines. Business has grown nicely – in this Lucky Country people seem to like buying imitation dog-droppings, plastic vomit and rubber gorilla masks.

The company has a Sydney sales rep, a NSW country rep, and representatives in the other States. There are 6 people working in warehousing and packing, and Brenda Lahiff runs the office – and the Canon.

She and Bruce McGetnie believe their computer offers the company the only practical solution to what had previously been a huge problem – preparation of invoices.

While invoicing is a familiar problem-area, it is particularly so in the case of a wholesaler handling a large range of small-priced items. Weirdo Imports is a classic example.

Many of its items have a unit value of 30 or 40 cents each and might be odered in dozen lots, along with 20 or 30 other items in similar quantities. The rubber masks are the most expensive items, at around $10 each, and in all the average item value is around $1. So the cost per item of preparing an invoice starts to assume a large proportion of the total invoice value.

CANON RAN AN ad with a coupon, I think it was, but anyway, I contacted them...

This was a problem the company could live with in its earlier days, but manual preparation of invoices was clearly a bottleneck even then. A Kalamazoo manual system was installed in 1979, but the volume of transactions continued to grow, and within 12 months it was overwhelmed.

Bruce McGetnie had been wondering about computers for some time. His initial choice of Canon, and his choice of a second Canon as an upgrade, is a case study in its own right.

"I'd been casually looking at computer ads for a couple of years," he says. "Canon ran an ad with a coupon, I think it was, but anyway I contacted them.

"One of their sales guys brought out the machine, plonked it down on the counter and actually *showed* us what it could do. On the spot, I said I'd have it."

Weirdo had acquired a simply-packaged desktop Canon CX-1 with a green screen, attached keyboard, dual 5¼-inch double-sided, double density floppy disks and a continuous stationery matrix printer. With it, the company planned to run Canon's standard business software pckages for invoicing, statements and stock control. Canon tailored the software to allow for up to 1,000 customers and up to 1,500 stock items. Within 18 months – by mid-1983 – business growth had overwhelmed the computer just as it had the earlier Kalamazoo paper system.

Bruce McGetnie upgraded to a larger Canon system because he believed his existing software would transfer easily to 8-inch floppies, and he was already enough of a computer convert not to want to spend time and money evaluating alternative suppliers. In fact, the changeover was not as smooth as Canon

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TODAY'S COMPUTERS

IT'S EASY TO UNDERSTAND TODAY'S COMPUTERS

expected, and the conversion encountered a lot of bugs. Although Bruce McGetnie didn't go into details, it sounded like this was a fairly fraught time, but that Canon worked very hard to look after its customer. Everything runs sweely now.

While the software conversion difficulties were something McGetnie – as a resolute layman in such things – could not have foreseen, nonetheless he obviously had been thinking about other ways to make the upgraded system not just bigger but better.

A prime hassle with the original CX-1 had been the limited capacity of the 5¼-inch disks, which had to be swapped when changing over from invoicing to producing stock reports, while the invoicing stationery had to be taken out of the printer and the report stationery threaded up, or vice-versa. In the process of changeover, invoices often got lost.

The upgrade system uses double-sided, double-density 8-inch disks and holds the whole system, so part of the problem was solved. The printer hassle was solved most pragmatically: McGetnie simply ordered the upgrade machine with a second printer.

Canon made the minor software change required, and now reports are printed on 15-inch paper using the extra printer, while the A4-size stationery runs through the standard printer supplied with an AS-100 and handles solely invoices and statements. The AS-100 was delivered in August 1983, and took over from the original CX-1 2 months later.

"For a company that only spends an hour or 2 a day on invoicing, maybe a second printer wouldn't be needed," McGetnie said. "For us, it might have been an expensive solution, but for $1,600 I reckon it was worth it."

The report-printer sits to one side; the invoice/statement printer is right in the middle of the action, on top of the display screen in front of Brenda Lahiff, who now has a more convenient detached keyboard to work with.

The upgraded system has capacity for 3000 customers and 3,000 stock items. Weirdo Imports currently has around 1,000 customers and 1,500 stock items, and is generating up to 6,000 lines of invoicing a day. Even so, the system

Bruce McGetnie *of Weirdo Imports*

was working very hard in the pre-Christmas period: "We started invoicing at 7am and we were still here at 10 at night," staffer Brenda Lahiff laughed.

So McGetnie has already identified the next step – finding a system which will support more than one terminal. He doesn't mind how this is achieved, as long as it works. It's just another piece of office equipment, after all.

Nonetheless, he's become a genuine computer convert.

"It's not until you get to use a computer that you get to understand what they do, and what they *can* do. No-one can ever visualize it.

"We used to need the best part of a week to produce our statements. The CX-1 did them in an hour. We could spend a month trying to catch up with sales tax; now it's done automatically.

"We no longer have to spend all that time backtracking to find manual errors in additions and sales tax calculations – and now the customer can actually read their invoices.

"We still produce some manual invices, as a matter of fact, but just for personal cash customers. Then we re-enter those invoices into the system, and the system finds all the mistakes we made."

The floppies are "religiously" backed-up every night. Canon's software, which is revised by free delivery of a new disk, is now virtually mature and – apart from the conversion to larger disks – there have been no problems. It took a while to recall when there had last been a printer problem, either.

Revert to manual

The company didn't realise how important the computer had become until the problems with the 8-inch disks. Canon's Melbourne office chased the bugs and returned the disks within 24 hours, but for that time the company had to revert to manual invoicing.

"We discovered we'd got to rely on the damn thing," says McGetnie. "We couldn't function without it."

"If we try to function without it again, I'll leave straight away," added Brenda Lahiff. But that seems unlikely.

Graham Howard is a Sydney-based freelance journalist.

Footnote: Since Bruce McGetnie had no idea of the specification of his Canons – or at any rate claimed not to – we asked Steve Collquhoun at Canon's Sydney office for the details. The original CX-1 was an 8-bit machine with 64Kb of RAM and cost around $9,500. The AS-100 is a 16-bit 8088 processor with 256Kb, and uses CP/M. Its standard printer is a 120 cps A-1200, while the second printer is a 140 cps X822 0A. Total system price is around $11,500.

CORNER STORE PCS

Small business people, ordinary people, are buying computers now. For them, the purchase is more important than some mighty corporation spending millions on mainframes.

How often have you read about multi-million-dollar computer purchases? The Westpac EFT venture, the Super Sally Network and so on. Well, guess what – real people just like you are also buying computers now.

Today's Computers decided to take a look at 4 typical small businesses in the city and in the country to find out why they bought their systems and what results they were getting:

Richard Street, a chartered accountant of Nowra, NSW, purchased his first Apple II Computer 4 years ago when he was a one-man practice and had just established himself. Richard's style as an accountant is to be a creative thinker and he felt the laborious side to number crunching could well be left to a computer.

Richard used his local Apple dealer, South Coast Computing Services, to purchase the Apple II with an Olivetti typewriter as the printer and purchased a software program called the Professional Accountant along with Sandy's Word Processor and VisiCalc.

Geoff Mills owns and runs a typical Shell service station in Wollongong on the South Coast of New South Wales. Geoff decided to computerize in 1980 because he had 2 problems. One was that he was finding money shortages in the till at the end of the shifts and the second was that people owed him money.

He felt that he had no option other than to computerize his point-of-sale operation. That he did with the aid of a young surfer named **Andy McVeigh,** who wrote his programs for him.

With the aid of a second Apple which he quickly purchased, Andy wrote him a program that is a point-of-sales debtors system. The total program records sales by product category, and should customers purchase petrol on credit, the transaction is posted to debtors file. Each employee has his own floppy disk, so a record of their shift's trading is also obtained.

Alan Storer

The second Apple is now housed in a caravan at the back of the service station to produce the reports and maintain records. Geoff firmly believes the computers must work for you, just as his do. He has also overcome his initial problems. Geoff claims he has not eliminated the till shortage entirely but the computer does make it easier to find staff mistakes.

Gorman and Storer is a small firm of solicitors in Little Collins Street, Melbourne. **Alan Storer** started getting excited about the prospects of a computer in his practice 4 years ago. However, he held off buying because the average computer salesman didn't understand his practice. As he put it, all the salesmen he met were intent on pushing what they had, not what he needed.

When the IBM-PC came along, Alan made his purchase from Random Access. With the IBM-PC, Alan also purchased an off-the-shelf word processing program called The Word. Total acquisition cost, approximately $9,000.

Denis Core has joined Alan Storer in ensuring that the IBM-PC fits smoothly into the practice. When I spoke to Denis, I asked if they had simply taken all their legal precedents and placed them on the word processor. In reply, Denis was quick to point out that they had done more than that.

As Denis explained: "A legal practice is in the word business. They have a great range of documents that need to be altered to suit particular situations." The practice's new systems now automatically produce what had to be done manually before. The practising partners fill out an instruction sheet which is echoed on the screen of the computer. The operator of the computer simply has to answer the questions on the screen from the instruction sheet.

"The business of legal document preparation is completed de-skilled," states Denis proudly.

The biggest benefit is that the total operation of preparing a will, with back sheets and bill is reduced 9-fold in time, allowing for greater productivity in the office.

Denis has also automated legal accounting, trust accounting and time recording.

The practice has now added a Direct PC computer to its business as a result of the success of the IBM-PC. The reason the Direct was chosen was that it saved around $2,000 on the purchase price of an IBM-PC. Alan Storer was quick to point out that he was extremely pleased with the Direct as it has more features than the IBM, including more memory, as well as a better price tag.

Harry Henderson is with the Focus Group, Melbourne.

From Soft Shoe To Software

What's a former actor doing running his own $1 million a year software business? Greg Lister says it's more important than the stage.

After 4 years, Greg Lister's home at Paddington, Sydney, remains unrenovated. He still drives a small Mazda car. Despite regular long hours of work, the former actor has managed to keep his girlfriend, Eva Fay.

Lister's one-time 120 hours a week have dropped to an apologetic 80 hours. He now works out of smart offices, instead of the damp basement of his home.

Sales of Lister's software, however, have skyrocketed from $2,000 in his first year (1979), to a current $1 million. In the next 12 months, Lister modestly agrees that his Software Source group may notch up sales of $2 million.

The bearded 36-year-old has now slid into the big time with an exclusive marketing deal with multinational, Microsoft in NSW, a widening spread of personal computer packages (including his *Spellbinder* bestseller) and consulting ties with Apple Computer Australia.

Software Source is a key distributor of more than 100 packages, via a network of 200 dealers throughout Australia, and it has also committed heavily to education and training services for its dealers and end-users.

Why should an actor succeed in small computers?

"I was a little technically inclined," he explains. "In 1979 I figured that software would become more important.

"But to pull it off, I realized that support for whatever software you sell, and very good knowledge of what you are selling, would be essential."

In 1979, Lister invested $1,200 in a Sorcerer computer from Dick Smith. "I wanted to play with it at home and then I started to develop some new software around it," he says.

Lister started selling software to work on the Sorcerer and Dick Smith encouraged him. In 1981 he formed the company Software Source (which he wholly owns) and, in his own words, "abandoned hardware".

Greg Lister *at work on his home PC.*

"I wanted vendor independent software I could sell on any machines," he says.

Lister became enthusiastic about a US package called *Spellbinder*, eventually tracked down its producer, Lexisoft, and won an exclusive distributorship for Australia.

Today, via its retail outlets, and 8 upgrades of *Spellbinder* later, Software Source sells more than 1,000 *Spellbinders* a year at $795 each. *Spellbinder* competes heavily with *Wordstar*, usually acknowledged as the top word processing package.

Software Source sells a range of other packages and with its recent Microsoft agreement, now has more than 100 different packages for sale, including many relating to Apple computers. It is heavily into selling software for IBM-PCs also, and Lister claims that IBM's entry into the personal computer industry is particularly beneficial because of the increasing standardization of software.

Within the company's offices in Bondi Junction, Lister has set up areas for educating and training large numbers of outsiders. He is looking to move some 400 people a month through 2 courses.

Software Source has packaged a training program to go on the shelves of its dealers alongside the other software packages they sell.

There are 8 staffers on board now at Bondi Junction, including a versatile technical manager, John Woolner, responsible for translating software to 75 different disk formats.

The future: Lister agrees that future growth may require injections of new capital, but he is adamant that equity is not up for grabs.

He enjoys being a loner, with few of the tastes of the rich – an exception being an IBM-PC XT computer in his Paddington home.

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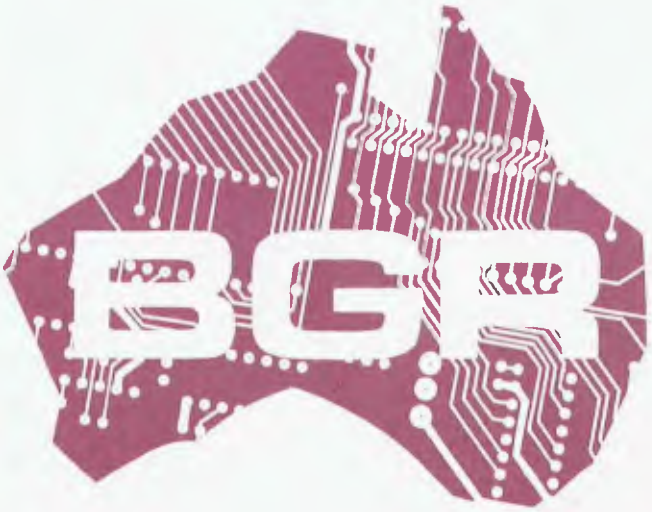

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